

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Vol. VII

CHICAGO, ILL., OCTOBER 22, 1907

No. 4

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydrated" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

Vulcan Steam Shovels

Are digging Cement Rock without blasting and loading it on cars for the Burt Portland Cement Co. of Bellevue, Mich., for less than 12 cents per cubic yard, and they are operating the shovels at only half capacity. How much is it costing YOU? Better write today for information.

The Vulcan Iron Works Company,

129 Vulcan Place, Toledo, Ohio

UNION MINING COMPANY,

Manufacturers of the Celebrated

MOUNT SAVAGE
FIRE BRICK
GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and
Cement Kiln
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.,
Mount Savage, Md.

CAPACITY, 60,000 PER DAY.
ESTABLISHED, 1841.

Northwestern Clay Mfg. Co.

New Windsor, Illinois.

J. O. FREEMAN,
Genl. Mgr.

Sewer Pipe

An inquiry will
be answered.

Drain Tile.

Works: Griffin, Ill.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO., . . . Ottawa, Ill.

DEXTER Portland Cement
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



Phoenix Portland Cement UNEXCELLED FOR ALL USES.

Manufactured by

PHOENIX CEMENT CO.

NAZARETH, PA.

Sole Selling Agent **WM. G. HARTMAN CEMENT CO.,**
Real Estate Trust Building PHILADELPHIA, PENNSYLVANIA

"RELIANCE" BELT ABSOLUTELY BEST

FOR GRIFFIN MILLS
FOR TUBE MILLS
FOR BALL MILLS

Chicago Belting Company
MAKERS

67-69 South Canal Street,

SEND US YOUR SPECIFICATIONS.

CHICAGO, ILL.

ALMA Portland Cement

**STANDARD BRAND
OF
MIDDLE WEST.**

Specially Adapted to all Reinforced Concrete
and High-Class Work.

Alma Cement Co.,
WELLSTON, OHIO

Special Features in this Number.

Great Chicago Cement Show in December.
Construction of the Burton Gap Tunnel at French Lick, Ind.
The Inter-City Viaduct and Bridge at Kansas City.
Test of the Barton System of Reinforcement in 1/2 Model.
"Scribo" Visits Supply Dealers in Kentucky, Illinois,
Missouri and Kansas.

Improved Shield Cement

The Best Natural Cement
With 3 parts sand—425 lbs. 1 year.
Economical for Concrete.

LAWRENCE CEMENT CO.
OF PENNA.

SIEGFRIED, PA.

PAMPHLET FREE.



THE SIDEWALK BRAND

SUCCESSFULLY USED FOR TEN YEARS IN ALL KINDS OF CONCRETE WORK

Send for 72 Page Illustrated Catalog No. 25

MARQUETTE CEMENT MANUFACTURING CO.

Marquette Building, Chicago



A STANDARD PORTLAND FOR UNIVERSAL USE

PRESENT
DAILY OUTPUT
6,500 BARRELS
INCREASING
TO
17,000 BARRELS



PLANTS
AT
CHICAGO
AND
PITTSBURG

UNIVERSAL PORTLAND CEMENT CO.
CHICAGO PITTSBURG

Use "LIMOID" in CONCRETE and CEMENT MORTAR

FOR ITS

Waterproofing and Smooth Working
Qualities and General Economy

CHARLES WARNER COMPANY

Land Title Bldg., Philadelphia

Wilmington, Del.

"LEHIGH" PORTLAND CEMENT

High Tensile Strength, Finely
Ground, Light and Uniform in Color.

MANUFACTURED BY THE

**Lehigh Portland
Cement Co.**

ALLENTOWN, PA

Western Office:
725 Rockefeller Bldg.,
CLEVELAND, OHIO

Write for Catalogue.

Capacity, 8,000,000 Yearly.

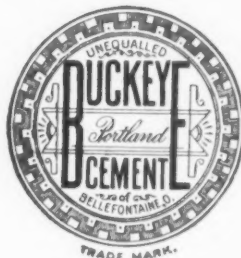


Manufacturers: Sales Office, Holland Building. St. Louis.

Buckeye Portland Cement Co.

ESTABLISHED 1888.

Manufacturers of the celebrated
"Buckeye" brand of



Portland Cement

"Buckeye" has stood the wear and tear in many
important places for the past fifteen years and
under the new process of manufacture is now
better than ever. :: :: :: :: ::

WE INVITE YOUR
CORRESPONDENCE.

Bellefontaine, Ohio.



ONE GRADE—ONE BRAND

The Recognized Standard
American Brand.

General Offices: EASTON, PA.

—SALES OFFICES:—

German National Bk. Bldg., PITTSBURGH.

Builders Exchange, BALTIMORE.

Marquette Building, CHICAGO.

Harrison Building, PHILADELPHIA.

Builders Exchange, BUFFALO.

Board of Trade Bldg., BOSTON.

St. Paul Bldg., NEW YORK.

Chicago Portland Cement Co.



MANUFACTURER OF...

"CHICAGO AA"
PORTLAND CEMENT.

We make one brand only.

The best that can be made.

HYDRATED PORTLAND LIME

IS IDEAL FOR

**Waterproofing
Concrete Blocks**

SAVES MONEY. TRY IT.



—FOR INFORMATION AND PRICES, WRITE—

CHICKAMAUGA CEMENT CO.,

Sole Manufacturers.

CHATTANOOGA, TENNESSEE

-
.
.
d
.
N.
.
de.
-
g
S
-
EE



as
B
J
R
tu
hi
an
It
30
th
on

th
th
C
of
B
tu
th
lin
st
va
an
re
th
fo
th
w
st
ce
fo
lin
at
to
of
th
so
ge
sa
ne
th
tit

B
th
in
fin
in
sit
re
he
m
n

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume VII.

CHICAGO, ILL., OCTOBER 22, 1907.

Number 4.

MODERN TUNNEL CONSTRUCTION.

A 2,200-Foot Bore on the Southern Railway Made Permanent with Reinforced Concrete. Ingenious Methods of Handling Machinery and Material.

One of the most interesting of the many recent achievements of modern concrete engineering is the Burton Gap Tunnel at French Lick, Ind., on the Jasper and French Lick extension of the Southern Railway, about four miles from French Lick. This tunnel is 2,200 feet long, 16 feet wide and 24 feet high in the clear, allowing for a single track with ample room at each side. It is on a $4^{\circ}30'$ curve for 300 feet at one end, with the remaining 1,900 feet on a tangent.

The excavation for this work was done by the MacArthur Brothers Company, whose main offices are in the Fisher Building, Chicago. The tunnel was driven through slate, soapstone, limestone and hard sandstone, the headings advancing from both ends, and close timbering was required, beech grown in the vicinity being used for this purpose. Near the west end the cutting was through hard soapstone and slate. At the center of the bore the formation consisted of limestone at the bottom and soapstone at the roof, while at a distance of about 600 feet from the eastern entrance the soapstone at the roof gave way to a hard sandstone, and the cut near the east end was through sandstone entirely.

The MacArthur Brothers Company began their part of the work in December, 1905, and finished the same leisurely in about a year. They did not rush operations, simply keeping up with the regular grading and track-laying of the 25-mile stretch of road for which they had the contract. In the tunnel work they employed a Marion steam shovel, and Ingersoll-Rand and Sullivan drills.

The special feature of the Burton Gap Tunnel is the reinforced concrete lining which constitutes the permanent wall and arch, about two feet thick throughout. This work was carried out by the Cullen-Friestedt Company, 1526 Tribune Building, Chicago, and Rock Products is indebted to F. J. Cullen, who had immediate charge of the work, for most of the information here given. The accompanying reproduction of the blue-print shows the general plan, the

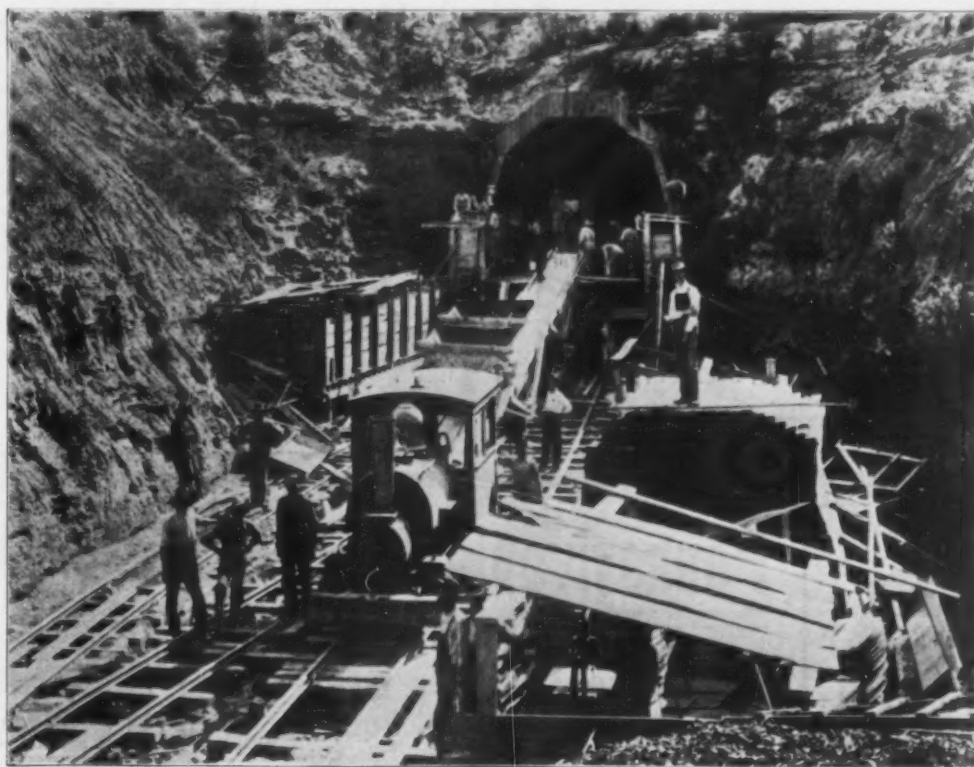
zontal wall-plate timbers, on which are placed 10x12-inch arch ribs, also set 3 feet apart on centers. The upright timbers are on 3x12-inch sills and are lagged with 3x6-inch planks. The arch ribs are lagged with 4x6-inch planks.

The concrete lining has a floor approximately 14 inches thick, laid on the sub-grade of the tunnel. The track ballast is confined between two concrete curb walls 12 inches high and 1 foot 10 inches from either

side to retain the ballast for the track. These curbs are built as a part of the floor and form a drain, 1 foot by 1 foot 10 inches in cross section, at each side of the tunnel. Weepholes, consisting of 3-inch vitrified tiling, spaced 20 feet apart in the base of the side walls, open into these side drains. The side walls of the lining are 2 feet thick, the arch decreasing from 2-foot thickness at the springing lines to 18 inches at the crown. The side walls and the arch are reinforced, 3 inches from each face, with a row of $\frac{3}{4}$ -inch Johnson corrugated bars, spaced as shown in the cross section, 1 foot 2 inches apart horizontally, with vertical bars 2 feet center front, and 2 feet center back. The timbering is enclosed in the concrete lining, the reinforcement bars being arranged to avoid it. The lining required 4,132 cubic yards of concrete (4,893 barrels cement, 2,149 yards sand, 3,801 yards rock) and 161.43 pounds of Johnson bars per linear foot of tunnel. The concrete was made in the proportions of 1 of Lehigh cement, $2\frac{1}{2}$ of sand and 5 of crushed stone. Screened crushed

stone, all of which would pass a 2-inch ring and be retained on a screen with $\frac{1}{2}$ -inch meshes, was used. Lehigh cement was used exclusively.

The Cullen-Friestedt Company began their part of



THE BURTON GAP TUNNEL, NEAR FRENCH LICK, IND. THE CULLEN-FRIESTEDT COMPANY, CONTRACTING ENGINEERS.

dimensions, and the details of the lining. The tunnel was driven through a clear width of 20 feet and a height of 26 feet 3 inches at the center of the arch, measuring to the outside limits of the timbering. The timbering consists of 10x12-inch uprights, spaced 3 feet apart on centers, and carrying 10x12-inch hori-

Continued on page 40.

Reputation Unrivalled

ONE BRAND ONLY
Sound, Strong, Uniform



ONE OF THE OLDEST AND THE BEST.

Vulcanite Portland Cement Co.

Flatiron Bldg., New York. Land Title Bldg., Philadelphia.

WHY?

Egyptian Portland Cement

Every mason likes it.
Works easy.
Excellent color.
High in tensile strength.
Fine ground.
Mill centrally located.
Low freight rates.
Popular price.

We can save you money

Write us your needs

THE BARTLETT CO.

Mills: Fenton, Mich.

Sales Office, Jackson, Mich.

A CONCRETE ROOF THAT DOES NOT LEAK



Medusa Water-Proof Compound

Makes all Concrete Impervious to Water

The concrete roof of the Herbivora Building at the Cincinnati Zoo, shown in this illustration, was made absolutely dry by applying a cement mortar containing Medusa.

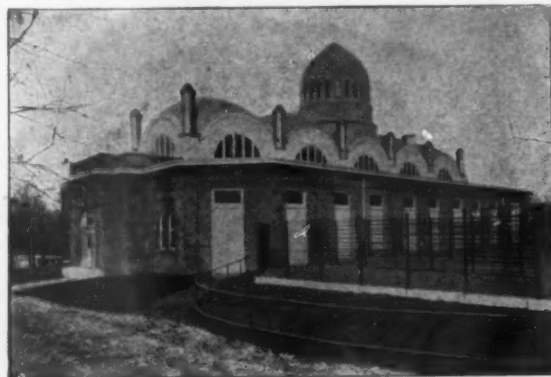
It Does Not Affect the Strength of Cement

Write for pamphlets describing its uses.

Sandusky Portland Cement Co.

SANDUSKY, OHIO

Beware of imitations and adulterated compounds that are sold for less than it costs us to make "Medusa"



Improved Utica Hydraulic Cement

The finest ground and highest grade Natural Cement manufactured in the U. S. Every car tested by Robt. W. Hunt & Co., and their test furnished on every car shipped.

MEACHAM & WRIGHT CO. Sole Agents, Chicago.

BANNER CEMENT CO.,

MAKERS OF THE FAMOUS BANNER BRAND OF

LOUISVILLE CEMENT.

Guaranteed that 90 per cent. will pass a ten thousand Mesh Sieve.

WE SELL TO DEALERS ONLY.

GENERAL OFFICE: MASONIC TEMPLE,

CHICAGO, ILL.



Pennsylvania Portland

UNEQUALLED FOR HIGH
CLASS CONCRETE WORK

Pennsylvania Cement Co.

26 CORTLANDT ST., NEW YORK



Tell 'em you saw it in ROCK PRODUCTS.

PATENT SOAPSTONE FINISH

PLAIN AND IN COLORS FOR WALLS AND CEILINGS

Patent Soapstone Mortar

Prepared in any Color for Laying Pressed and Enamelled Brick, Stone Fronts, Terra Cotta, Chimneys, Fire-Places, Etc.

The Dodge Blackboard Material or Artificial Slate.

The Potter Blackboard Material.

SOAPSTONE MICA. CONCRETE DRESSING.
CRUSHED, GROUND AND BOLTED SOAPSTONE.

AMERICAN SOAPSTONE FINISH CO.

C. P. DODGE, Proprietor.

CHESTER DEPOT, VT.

CAPACITY
700,000
BARRELS
ANNUALLY

OFFICE
ALLENTOWN, PA.



STANDARD
SPECIFICATIONS
GUARANTEED

Newaygo Portland Cement Co.

Sales Office: Michigan Trust Building

GRAND RAPIDS, MICH.

Write us for prices. Send us your orders.



Strength
Durability
Permanence

Not only laboratory tests, but results in actual work prove the high grade quality of

**Northampton
Portland Cement**

Especially adapted for Cement Blocks, Sidewalks,
and all forms of concrete and re-inforced
concrete construction.

Northampton Portland Cement Co.

No. 1 Madison Ave., NEW YORK.

Works at Stockertown, Pa.

EDISON

Portland Cement Co.



85 per cent. thru 200
98 per cent. thru 100

The Finest Ground Portland Cement Manufactured

"Neat tests are of less value than those of the briquettes made with sand and cement. The fineness of the cement is important, for the finer it is the more sand can be used with it."

[Abstract from "Specifications for Portland Cement," issued by the United States Navy Department, June 12, 1905.]

FINE GRINDING OF PORTLAND CEMENT AND WHAT IT MEANS

For a proper understanding and full appreciation of the importance of fine grinding, it is necessary to explain that Portland Cement (as manufactured in the Lehigh Valley) is made from what is commonly understood as "Cement Rock," with the addition of sufficient limestone to give the necessary amount of lime. The rock is broken down and then ground to a fineness of 80 per cent to 90 per cent through a 200 mesh screen. This ground material passes through kilns and comes out in clinker. This is ground and that part of this finely ground clinker that will pass a 200 mesh screen is cement; the residue is still clinker. These coarse particles or clinkers will absorb water very slowly, are practically inert, and have very feeble cementing properties. The residue on a 100 mesh screen is useless.

Edison Portland Cement is ground 85 per cent through a 200 mesh screen,—10 per cent finer than other brands. This can be verified in any laboratory.

In a barrel of Edison Portland Cement, therefore, you get 85 per cent of Portland Cement and 15 per cent of clinker. In a barrel of other brands you get 75 per cent of cement and 25 per cent of clinker.

If you are buying a ton of coal, would you buy the coal containing 25 per cent of slate, or would you prefer the coal containing but 15 per cent of slate?

If, instead, you are buying iron ore, would you not give preference to ore that contained 10 per cent more units of iron?

Another point is worth considering and that is that the Edison Portland Cement Company make but one brand or quality, and that is the best.

SALES OFFICES:

St. James Building, New York.
Arcade Building, Philadelphia.
Machesney Building, Pittsburgh.
Union Building, Newark, N. J.
Post Office Square Bldg., Boston, Mass.

Tell 'em you saw it in ROCK PRODUCTS.

"Superior Portland"

Guaranteed to meet the requirements of the "Standard Specifications adopted by the American Society of Civil Engineers."

Manufactured by

The Superior Portland Cement Co.

Works at
Superior, Ohio
On D. T. & I. R. R.

General Offices
Charleston, W. Va.

Paint! Paint! Paint!-Leak! Leak! Leak!

There is no reason in the world why you should buy a roof that *needs* painting. The *need* of painting is *proof* of weakness. It is not the *roof* that protects, it's the *paint*. If you forget to put the paint on, or for economical reasons omit doing so, you have a leaky roof; and a leaky roof is always an abomination.

Amalite roofing requires absolutely no painting or coating of any kind during its life. This diagram below tells you why.



You will notice that the top layer consists of a *genuine mineral* surface that will last as long as the roof, and not only makes painting unnecessary, but gives an amount of durability that is remarkable. It saves you the *cost* of paint and the *labor* of putting it on.

If you want the best, most economical and satisfactory ready roofing made, *remember Amalite*.

FREE SAMPLE. Booklet about it and free Sample will be forwarded at once on receipt of your name and address. This is *proof positive* and you should send for it today.

BARRETT MANUFACTURING COMPANY

New York Chicago Cleveland Allegheny Kansas City St. Louis Boston Minneapolis Philadelphia New Orleans Cincinnati London, Eng.



Tell 'em you saw it in ROCK PRODUCTS.

"THE QUARRYMAN FINDS A NEW STANDARD OF QUALITY IN INDEPENDENT"



INDEPENDENT POWDER
COMPANY OF MISSOURI

HOME OFFICE JOPLIN MO
FACTORY JOPLIN MO
GENERAL SALES OFFICE
901 TIMES BLDG ST LOUIS MO

DU PONT
EXPLOSIVES

GIANT POWDER
The Standard Explosive for Quarry Work

E. I. DU PONT DE NEMOURS POWDER CO.
WILMINGTON, DEL.

OFFICES

NEW YORK	PHILADELPHIA	CHICAGO
BOSTON	HUNTINGTON	JOPLIN
BRANTON	PITTSBURG	DULUTH
PELTON	CINCINNATI	DOUGHTON
NASHVILLE	TERRE HAUTE	MARQUETTE
BIRMINGHAM	ST LOUIS	KANSAS CITY



AETNA DYNAMITE

**The Standard Explosive
Always Full Strength
Always the Same**

MADE BY

THE AETNA POWDER COMPANY

143 DEARBORN STREET, CHICAGO

Bank of Commerce Building
ST. LOUIS, MO.

CHATTANOOGA, TENN.
XENIA, OHIO

Woodward Building
BIRMINGHAM, ALA.

Tell 'em you saw it in ROCK PRODUCTS.

Economy Dictates

that the jaw-plates, cheek-plates, cones and concaves of your crushers should be made of

"Taylor-Made" **Manganese Steel** "Taylor-Made"



The actual ratio of wear in "Taylor-Made" plates, as compared with other castings, has been proved by large users in hundreds of cases to warrant their use.

"The Reason's in the Steel"

We shall be pleased to give you further information.

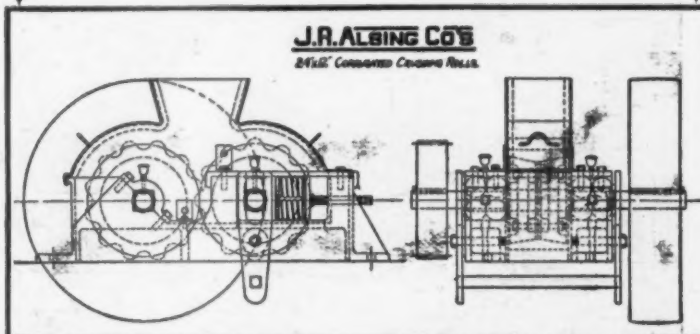
Taylor Iron & Steel Co.

High Bridge, N. J.

Crushing Rolls

Of all descriptions built to suit the requirements

If you are having trouble with your machines, write us and our consulting engineers will be pleased to straighten you out.



Engineers and Builders of machinery for the reduction and drying of all kinds of material.

Send for our latest illustrated catalogue "A"

J. R. ALSING CO.,

R. F. ABBE, Pres't

Main Office: 136 Liberty St., NEW YORK.

Dept. "R"

KOPPEL

TURNTABLES FOR INDUSTRIAL AND PORTABLE TRACK

We Make other Types of Turntables



Cars Built to Order

For Mines, Quarries and Stone Crushing Plants

[IN STOCK]

Rails, Steel Ties, Portable Track Switches, Frogs, Turntables and Dump Cars of Any Type

WRITE FOR CATALOG No. 37

Arthur Koppel Company

1622 Machesney Bldg.,
151 Morris Bldg.,
1641 L. Monadnock Bldg.,
1516 Chronicle Bldg.,

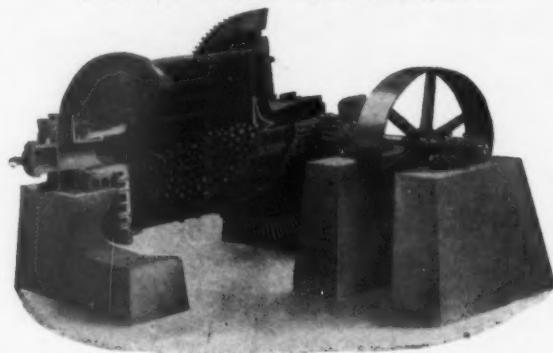
Pittsburg
New York
Chicago
San Francisco

Works at
KOPPEL
P. O. Address, HOMEWOOD
Beaver County, PA.
Trade-Mark.

Cement Mill Machinery

FOR EITHER WET OR DRY METHOD OF MANUFACTURE

CRUSHERS—DRYERS—KILNS—COOLERS
TUBE MILLS—BALL TUBE MILLS, ETC.



Our Ball-Tube Mill shown above is a distinct innovation in the line of cement-making machinery, and is destined to entirely replace the old-time ball mill for the coarse grinding of cement clinker, because of its much greater grinding capacity per horse-power and the extremely low cost for repairs.

**NO SCREENS TO CLOG OR WEAR OUT
THEREFORE NO SHUT-DOWNS**

Our entire line of Cement Mill Machinery is distinctive in character and design and is acknowledged by discerning engineers to be superior to any other on the market.

Our new Catalog No. 7 gives full and complete details. Send for it.

**POWER AND MINING
MACHINERY COMPANY**

CUDAHY (Suburb of Milwaukee) WISCONSIN

ATLANTA, CHICAGO, EL PASO, NEW YORK, SALT LAKE, SAN FRANCISCO

Southern Representatives: W. E. Austin Co., Atlanta, Knoxville, Birmingham.

Tell 'em you saw it in ROCK PRODUCTS.

How Dollars Are Made

By Hydrating Your Lime

"THE KRITZER WAY"

Our little booklet on hydrating will tell you.

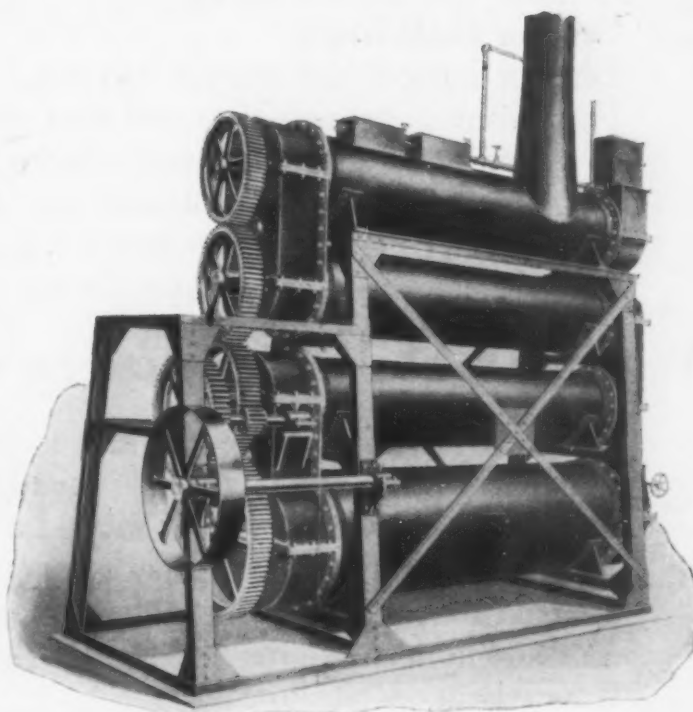
It is an interesting short story on lime.

Gives the reasons of the success and failures of hydrating.

Shows you how to judge the good hydrator from the bad.

Shows that a little money makes big money when invested right. Let our hydrating experts prescribe for your needs. Hydrating is a scientific operation. Manufacturers rightly demand, not merely a hydrator, but the most economical equipment that can be produced.

If you will write us your hydrating needs we will be glad to tell you the plant best suited to your particular requirements.



The Kritzer Continuous Hydrator.

Let Us Send You the Booklet. It's Free.

THE KRITZER COMPANY

WESTERN AVENUE AND SEVENTEENTH STREET

CHICAGO, ILL.

Tell 'em you saw it in ROCK PRODUCTS.

WHY?

Why are the Palmer Lime & Cement Co.'s Limes in demand?
Why are they used in all principal buildings in New York, Brooklyn and neighboring cities?

Because they are the **best**.

Best for **finishing**.

Best for **brick and stone work**.

For finishing, because they will **not** pit, will **not** follow the trowel, and work **smooth and clean**.

For **brick and stone**, because they are strong, large yielders, and will lay **more** brick per barrel than any other lime on the market, therefore they are cheaper for the mason's use.

We are Sole Distributers of the—

Cheshire finishing lime, which is well known and always A 1.

Bellefonte Lime, a highly caustic chemical lime, and a large yielder for brick work, making a bond almost equal to cement mortar.

Palmer select finishing, fully guaranteed.

Palmer No. 1 common, high grade for brown and scratch coats.

Yorktown Heights lime

Connecticut White lime

Hoosac Valley lime

Hadsell White lime

} Especially adapted to brown and scratch coats.

And—

Palmer Chemical Lime, which has a universal reputation, analyzing over 99 per cent Pure Carbonate.

Alsen's American Portland Cement, for Long Island.

We **succeed** in pleasing our customers.

The Palmer Lime & Cement Co.

FOSTER F. COMSTOCK, Manager

Telephone 6610, 6611, 6612 Cortlandt.

149 Broadway, NEW YORK CITY

Tell 'em you saw it in ROCK PRODUCTS.

Rock Products

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume VII.

CHICAGO, OCTOBER 22, 1907.

Number 4.

THE FRANCIS PUBLISHING COMPANY

EDGAR H. DEFEBAGH, Pres.

Seventh Floor Ellsworth Bldg., 355 Dearborn St., Chicago, Ill., U. S. A.

Telephone Harrison 4960.

EDGAR H. DEFEBAGH. EDITORS: FRED K. IRVINE HENRY H. GIBSON.
HENRY C. WHITAKER, Barre, Vt. ASSOCIATE EDITORS: BENJ. F. LIPPOLD, New York City.

Communications on subjects of interest to any branch of the stone industry are solicited, and will be paid for if available. Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....\$1.00
In the Dominion of Canada and all Countries in the Postal Union.....1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

BRANCH OFFICES:

NEW YORK CITY, Room 527 St. James Bldg. NEW ENGLAND, 16 Merchant St., Barre, Vt.
PHILADELPHIA, Pa., 319 Land Title Bldg.

Entered as second-class matter at the Post Office in Chicago, Ill.

Labor is the scarcest commodity in every line, according to the best authenticated reports.

Car shortage is again with us. There has really been no tangible relief for more than a year.

Railroad engineering departments have awakened to the full appreciation of the value of concrete in permanent improvements.

When things get bad, remember you can always be thankful that they are no worse. This recipe has been known to give good results.

The number of cement blocks going into actual construction this year amounts to more than have been made in all former years taken together.

Did you ever set down the cost of materials of every kind that go into a building in one column, and in another column the total labor bills?

Dealers have carried very light stocks of staple supplies throughout this entire season, although they have done, in most cases, the largest amount of business on record. There are a few exceptions in some of the larger cities.

Public confidence in concrete construction is now so firmly established that the downfall of an incompetent builder here and there has little or no effect. The number of failures of this kind has grown remarkably smaller. Let us be thankful.

Lime operators generally report a prosperous year. There has been business enough to use up all the product of the kilns as fast as it was made, and while the price has not always been what it should be perhaps, there is nothing like the usual amount of kicks. This is eloquent silence.

There are a few cement-block machinery manufacturers who cater to the legitimate trade. They design machines for results in the hands of men who know the business. Then there are still some fakers who continue the gentle art of "bumping the sucker." The former get a new order when their machines wear out; the others hear nothing from their customers but complaints, and their product goes early into junk.

Plastering materials are having their big inning as the rush to complete building jobs before cold weather grows more pressing. A wholesome increase in the specifications calling for hard wall plaster and finishing materials is to be noted. We are really only beginning to learn how to use gypsum products in this country, but it's growing and spreading out all the time.

At the Coliseum, Chicago, during the week of December 16 to 21, you can see cement in every possible form. This show will be held under the auspices of the Western cement manufacturers. All manufacturers, dealers, contractors and architects are invited to participate and assist in making it a success. It will be the first of a number of expositions to show the progress of the cement industry. Are you willing to do your part? Through education the cement industry has progressed faster than any other. More light and information on the subject will mean increased progress. Help roll the big snowball!

Let every dealer and contractor take a personal interest in the promotion of the internal waterways improvements which are to be considered by the next Congress. The material to be used and the equipment to be employed, besides the labor bills, are extremely attractive from a business point of view. If every man in the great Mississippi Basin who is interested will personally take the matter up with his own Congressman there is little doubt of the result. The country needs the improvement quite as much as the material man needs this great outlet and the contractor the employment. Now, take an interest in your own government and do this thing.

If anybody thinks that Portland cement has utterly and forever dropped to the demnition bow-wows, he has another guess coming. It has been a groggy year, to say the least, and the sum total of many adverse elements have bumped into the steady progress of cement expansion. Who can say that the present cloud of low quotations may not have a silver or even a golden lining by curtailing the mad rush of uninitiated prospective manufacturers into a very difficult business? The growth of the consumption of cement has been phenomenal, beyond that of any other commodity, but it takes money to use cement—money in big chunks, in which the cement is the most indispensable factor, but at the same time an insignificant item of cost. It only looks easy to the man who doesn't know. The cement manufacturing business requires unrelenting attention, skill, much technical study and big capital. Those who have achieved success are the type of men gifted with ability to create big results in whatever they undertake. It is not, after all, so much cement as the men who make cement, and they know what the real conditions are.

Editorial Chat

That Cement Show.

On Saturday night the corn festival was over, and it was a success. "Corn is king," they say, but cement is four aces. More people are interested in cement today than in any other manufactured product. The system inaugurated by a number of concerns manufacturing cement and machinery to make possible the many forms of concrete and cement work, to educate the consumer as to what can be done with cement in comparison with other materials, has done much to increase the unusual demand for this product. Several cement manufacturers in the West, realizing that Chicago is the business center and really the Midway Plaisance of the country (you are liable to see men from Alaska, Arizona, Florida and New York City on the streets any day), feel that cement should be represented by an exposition, to give the people in Chicago, who, by the way, have been less progressive in the use of cement than any other large city, an opportunity to learn more of this industry. Several meetings were held, composed of local representatives, to look over the field and see what the prospects were for holding such an exposition. This was practically lighting the fire. A number of the Western manufacturers were apprised of the plan of what was on tap and were very enthusiastic. "Sure thing," they said, "we want to be connected with an exposition of that character." So the Cement Products Exhibition Company was advertised as having opened its books for the subscription of stock, all of which had practically been spoken for. The idea of the promoters of the proposition is to create a permanent exposition of cement and cement products in Chicago each year, and the Coliseum was secured for the first cement show to be held in Chicago during the week of December 16 to 21. The services of one of the best exposition managers in the country, L. L. Fest (who is making his headquarters at the New Southern Hotel, Chicago), were secured, and as soon as this paper reaches your hands he no doubt will hear from you. Mr. Fest has had the management of the automobile shows in Chicago, as well as other shows, knows the ins and outs of conducting expositions, and is hoped will have the cooperation of every cement manufacturer in the country interested in Western trade, and of every man who makes machinery that will put this cement and other ingredients into blocks, bricks, ornamental cement, and reinforced concrete in every form. This exposition is not conducted for the personal gain of any individual. The idea is to promote and enlarge the interest in the use of Portland cement. If the shoe and leather men can interest thousands of people in their industry, just think what a wide field the cement industry covers—the architect, contractor, dealer, manufacturer of special products, and then the consumer.

What You Will See at the Show.

The probabilities are that a house will be constructed, bungalow shape, entirely of cement, furnished with cement products, the walls adorned with pictures of magnificent cement buildings, country and city homes, which will give you an idea of the beauty, comfort and strength of buildings made of cement.

A sample of the cement sidewalk which is under your feet every day will be shown, but of course there are a lot of people who are always looking up at the sky. The front piazza, if built of cement, is a very comfortable place on a summer night, and thousands of them are built. Wouldn't you like to see some new architecture in that line? No doubt it will be exhibited. There is the big storage tank for grain or water; also dam construction. Miles of fences are being constructed of reinforced concrete at the Union Stock Yards, and cement floors are being used, so that the yards districts will be "next to godliness" hereafter. Pictures of railway stations and residences in course of construction will be exhibited. The water tank on the farm, which in former years it was necessary to replace frequently, is now made of reinforced concrete, and "long life" will be demonstrated.

By attending this exposition, you will discover many new uses to which cement can be put, which will get new customers for you in the country.

Everybody is invited and everyone connected with the cement industry should have an exhibit—every manufacturer of cement, concrete machinery, supply people, the contractor, architect, dealer, and the man who makes any appliance for any form of cement work. They should not only do their part to make this exposition a howling success in an exhibit way, but should use a rubber stamp on letterheads and envelopes: "Visit the Cement Show at the Coliseum in Chicago, December 16 to 21." Don't let a few people do all the work and pay the money. Each one connected with the industry should do his part. If you are not asked to step up, just come up anyway. If anyone is neglected in this invitation, it is an error of omission, not commission. People have the habit now—the exposition habit. Formerly we had to view these things from a dull book, but the cement show will give an opportunity for everybody to become interested in the cement industry, so put your shoulder to the wheel and make it a success. Let's all get busy.

Loomis & Rose, contractors at Mattoon, Ill., have been awarded the contract to erect for the city a reservoir for the water supply. Work upon this job will be started immediately. Among other things the estimates call for 4,000 barrels of Portland cement.

Our friend J. A. Fairleigh, formerly connected with the Western Cement Company at Louisville, is now practicing his profession in the firm of Cushman & Fairleigh, civil engineers, at Chattanooga, Tenn. They are making a specialty of municipal work and county and State road engineering operations, as general consulting engineers. Their offices are at 36 Loveman Building.

Mr. Dai H. Lewis, 760 Main Street, Buffalo, N. Y., has been selected to manage the 1908 convention of the National Association of Cement Users. The convention will be held in Buffalo, N. Y., in January, according to announcement upon another page. All communications relative to this convention should be addressed to Mr. Lewis.

Charles C. Kritzer of the Kritzer Company, Chicago, announces a contract with the Lowell M. Palmer Company for a plant to hydrate lime at Yorktown Heights, N. Y. He has just completed a hydrating plant for the Knickerbocker Lime Company, Philadelphia, Pa., and just as we go to press Mr. Kritzer is on the ground for the purpose of starting the plant for its initial run. He is confident that with this plant he will meet with his usual success, and of this there will be more anon.

Robert S. Edwards, Boston, Mass., was a caller at the ROCK PRODUCTS sanctum this month. He is a member of the firm of Sherman & Edwards, chemists and chemical engineers, well and favorably known to the leading material producers.

Richard Kind of the Toledo Builders' Supply Company, Toledo, O., has been under the weather for several weeks—in fact, ever since the ordeal of the Elks' parade in Philadelphia, in which he participated as a member of the famous drill corps of the Toledo Lodge, known to fame as the "Cherry-pickers." We are glad to report at this time that Friend Richard is much better and back again at his desk as of yore.

H. Dittlinger of New Braunfels, Tex., was a Chicago visitor this month. He reports that the work on his new lime plant is progressing in a very satisfactory manner. His kilns will be equipped by the Combustion Utilities Company for economical firing with lignite fuel, which abounds in the neighborhood and is cheaper in that locality than any bituminous coal. All the lime produced at this plant will be sold in the hydrated form. The quarry, the kilns and the hydrating proposition will all be the best that money can buy. He expects the plant to be in operation about the first of the year.

H. M. Scott, from the Indianapolis office of the Lehigh Portland Cement Company, visited in Chicago this month. Mr. Scott is a pushing young fellow, and, under the guidance of Frederick E. Paulson, will certainly make a first-class cement man.

Peter Martin, the "Jim Hill" of the lime business, sometimes of Huntington, Ind., came to town with his overshoes on the other day, but did not tarry long. The ROCK PRODUCTS observatory can tell when a man is in town, so it is best to register at headquarters in the ROCK PRODUCTS office. And if

you are on a secret tour, people won't find it out unless you want them to.

I was a "could-not-help-but" listener the other day, to a cement man who was conversing with the general superintendent of a railroad. The cement man said: "We have car so-and-so, containing some parts for our steam shovel, that we are anxious to unload tomorrow morning. If we don't get this shovel to operating, it will mean 4,000 barrels of cement for us and that much less freight for you, and you know when time once passes it never returns. Now look here, old man, see if you cannot put that car in. We need that steam shovel and it is a case of having the extra parts on hand." The superintendent said: "Certainly; we will hold that freight in order to accommodate you." The plant did not shut down, and this incident illustrates the fact that the car situation this year has improved. It also backs up the opinion that with the right kind of an argument a railroad superintendent is a very tractable gentleman, and better treatment comes from sugar than from vinegar.

Speaking of cars, another manufacturer said: "Well, we are getting just about enough to fill our orders. We have no surplus orders on our books, but we are really happily surprised with the average price at the mill and are not discouraged with the business situation at this time. The fact is, we are looking forward to a fairly good fall business, and why shouldn't we? Look at the way crops are being handled."

Another cement man said: "All men are liars," but we said, "Hold on." "Well," he said, "all cement men," and we said, "Hold on, hold on." "But," he said, "what's the use of a man always telling that he is getting so much on an average at the mill, when we know he is not, because we see his quotations and bills? I am not an angel and have made mistakes myself in talking too much and sometimes have to cut the price because I get to talking about what someone else is selling cement for and inadvertently put my customers in line for a lower price." After one or two experiences of this kind, buy a joke book and sit up nights learning to tell them to your customer. When you get him in a good humor, after his breakfast has settled, it is easy to sell a few cars at a decent price.

Among the visiting cement delegates to the Chicago market this month were F. E. Paulson and Bert Swet, of the Lehigh Portland Cement Company. Mr. Paulson has become quite a car detective and claims the railroad men are about the nicest people in the world. Mr. Swet had been making a little tour of inspection among his customers in the West, and landed some good orders.

Max F. Abbé, president of the Abbé Engineering Company, New York, has just returned after a five months' trip in Europe. He visited England, Belgium, France and Germany. In several of the countries he made contracts for the manufacture of his tube mills and linings under various patents that he owns. In Germany he made a contract with the Fried. Krupp Aktiengesellschaft Grusonwerk, at Magdeburg-Buckau, for the building in the United States of their celebrated Excelsior Mills, of which the Krupp people have sold 30,000 in various parts of the world. The Abbé Engineering Company will be ready within a month to supply the trade with mills of this type.

The latest stunt of the Department of Locks and Dams is toward the transportation of Portland cement clinker to the Isthmus, where it will be crushed and ground into Portland cement. If this method is adopted, it will mean quite a saving in the cooperative costs, which will represent a large sum for the amount of cement that will probably be consumed on the canal work. In this connection some reference has been made to utilizing the slag produced in and around Pittsburgh, but it is to be hoped that before finally deciding on this point the engineers in charge of the Panama work will consider the effect of slag cement used on the work of the sewage system in New Orleans some four or five years ago.

We have an inquiry on our desk as to who manufactures the "Crown Jewel" brand of lime. We are not able to give this information, and if a man really wants to spend his money for this brand, inasmuch as it is not advertised, some other manufacturer will probably get the order. If you happen to know who manufactures this brand of lime, please address ROCK PRODUCTS.

W. H. Selby of the Wabash (Ind.) Portland Cement Company was a Chicago visitor recently.

The Memphis Waterways Convention.

On October 4 and 5 all the organizations which have for their object the promotion of the improvement of the great national internal waterways met in popular convention at Memphis, Tenn. President Roosevelt was there; the Governors of twenty-one States were present and participated in the exercises. The delegates came from every part of the great Mississippi Basin—Pittsburg on the east, Kansas to the west, while the north and south boundaries were only limited by Canada and the Gulf of Mexico. There were thousands of delegates, representing almost every line of industry, beginning with that of the farmer and even including railroad men who are big enough to see the tremendous expansion of commerce that will spring into being as quick as the water route improvements are completed and the terminals and transfer facilities provided. It resembled a great national awakening. With such a resolve expressed by such important commercial interests it is surely possible to put the great improvements into being. The resolutions adopted at the Memphis convention were as follows:

THE RESOLUTIONS.

WHEREAS, For more than half a century the desirability of a deep waterway, extending from the Great Lakes of the North to the Gulf of Mexico, has been generally recognized and favored by many of the leading statesmen and publicists of America as an economic and commercial, if not a strategic and military necessity; this sentiment being first voiced in part, it will be remembered, by the historic convention composed of delegates from all the Northwestern and Southern States, and held in the city of Memphis in November, 1845, with John C. Calhoun as chairman, in the following direct and forceful resolution, to-wit:

"Resolved, That the project of connecting the Mississippi River with the Lakes of the North and thence with the Atlantic Ocean by a ship canal is a measure worthy of the enlightened consideration of Congress;" and

WHEREAS, The demand for the speedy completion of this magnificent public work has become more and more apparent and pronounced as the country has developed, it being now manifest to the most casual and careless observer that, notwithstanding the enormous increase in railroad mileage during the past fifty years, the transportation facilities furnished thereby are totally inadequate to the task of handling properly, economically and satisfactorily the vast tonnage supplied by the increased output of the mines, farms and factories of the Mississippi Valley; and

WHEREAS, It is also manifest that the valuable system of waterways provided by nature as a natural rival of the railroads of the country, and the ever-present and potent regulators of their transportation charges, have been too long neglected, or at least that their development and betterment have not kept pace with the reasonable demands and requirements of the public; and,

WHEREAS, It is known of all men that the completion of the Panama Canal will, in the language of the great American navigator and naval commander, Commodore Maury, "carry the delta of the Mississippi across the continent, and place one mouth of that river in the Pacific Ocean," thus making "the greatest of rivers tributary to the greatest of oceans"; and it is also known that to reap all the benefits and rich rewards that will follow the completion of the isthmian canal we must provide direct, safe and cheap transportation for the natural and manufactured products of the Mississippi Valley by means of a deep waterway of a minimum depth of 14 feet, extending from Lake Michigan to the Mississippi, and then southward via that river to the Gulf of Mexico; and,

WHEREAS, The National Government is charged by our Constitution and laws with, and in pursuance thereof, has properly assumed control and jurisdiction of the rivers, harbors and waterways of the country, and is therefore committed to the duty of their improvement and betterment by some comprehensive and intelligent plan which will best conserve the interests of the whole people;

Resolved, That it is the sense of this convention that the deepening of the waterways from the Lakes to the Gulf is a public necessity, and that it is a national and imperative duty to take definite and immediate action to deepen said waterways to a depth of 14 feet from the Lakes to the Gulf of Mexico through the route already selected by the army engineers with all practical speed.

Resolved, That it is the intention that this grand channel shall be a part of a great comprehensive system of inland waterways which shall include the great tributaries of the Mississippi River, and the other meritorious waterways of the Mississippi Valley.

Be it further resolved, That the Lakes-to-the-Gulf Deep Waterways Association hereby extends to our co-laborers in the great work of inland waterways improvements, the Missouri Valley Improvement Association; the Upper Mississippi Improvement Association; the Interstate Mississippi Improvement and Levee Association; the Ohio Valley Improvement Association; the Interstate Inland Waterways Association of Louisiana and Texas, and all other kindred associations in this great valley, thanks for their valuable assistance in the past, and assure them of our sympathetic interest in the object of their efforts in the important work in which they are respectively engaged, and of our most cordial and energetic cooperation therein.

Be it further resolved, That we hereby tender the unanimous and profound thanks of this convention to the President for his masterly and forceful address, and for the great honor he has conferred upon us by his presence here as our most distinguished guest.

Be it further resolved, That we hereby tender our cordial thanks to the Governors of sovereign States, and to the other distinguished statesmen and gentlemen who have honored us by their presence; and we also thank the patriotic and public-spirited people of the great and growing city of Memphis for their unvarying courtesy and royal hospitality.

Be it further resolved, That the Hon. William K. Kavanaugh, president of the Lakes-to-the-Gulf Deep Waterways Association, be and he is hereby requested and empowered to appoint a committee composed of fifty members to present these resolutions to the next Congress of the United States, and also to use all honorable and proper means as the representative of and in connection with this association, to induce Congress to act favorably thereon at its next session, and that the said president of this association be chairman of said committee.

Be it further resolved, That we heartily indorse the efforts of the Rivers and Harbors Congress of the United States to secure an annual appropriation of not less than fifty million dollars for the improvement of rivers and harbors.

The first great step has been taken by National and State officials and by the industrial and commercial interests of the Mississippi Basin toward the permanent improvement of our internal waterways. It will now be passed on to the National Congress by a well-selected committee as the will of a majority of the sovereign people of the nation. There can be but one end to such a movement, and this unanimity of the delegates at the Memphis convention means that the work to be done will be done speedily.

To the material, supply and heavy contracting interests who are readers of ROCK PRODUCTS we need not suggest the far-reaching importance of promoting the work. The dredging, excavating and concrete constructing will amount to millions every year until the whole great plan is completed. The improvements of the Mississippi alone from St. Louis to the Gulf would be of great importance to the industry, but when we take into consideration that the Ohio from Pittsburg to Cairo, the Missouri from Kansas City to St. Louis, and the Illinois River from Chicago to its mouth, besides numerous little streams which enter into the Father of Waters, are also included in the plan, it becomes a matter of vital interest to contracting and material supply people over a wide range of country.

Every man who is interested in these lines should make it his personal business to have an interview with the Congressman who represents the district in which he resides and insist that this important improvement receive his vote when the matter comes before the next Congress. If every Congressman whose district will be directly benefited commercially by the waterways improvement can be induced to vote for the measure it will be carried by a splendid majority, and in such a way that the work can begin as early as intelligent surveys can be completed. In fact, some of the work could be started next season, in time to effect a heavy consumption of materials in what some people fear will be an off year in construction lines. One good way to assist in staving off the effects of the presidential campaign year is to secure the Government as an enormous consumer during that period of uncertainty at least.

Now, do not read this and lay it aside, but sit down and write a letter to your Congressman, so that he can know that one member of his constituency wants to have the great national improvement undertaken at once. If you will do this yourself and see that your competitor and neighbor do likewise, that Congressman of yours will be sitting up to take notice the minute the bill is announced in the House. The business interests of the country have stated their demands in no uncertain terms. Let the readers of ROCK PRODUCTS, who are themselves personally interested in this movement, bind themselves into one great committee of promotion and let us show them what it means when all the material supply men and contracting interests move in a body like one unit in one common cause.

The President has pledged himself to put a clause in his next message to Congress directing attention to the imperative need for the improvement of the national waterways. Like everything else that he does, it will be expressed in true Roosevelt style. In no uncertain terms will he express to them the results of his observations during his trip down the Mississippi from Keokuk to Memphis, and with the powerful backing of the administration there is no doubt that a committee of the right stripe will be appointed to approve the bill which will put this great movement on its way toward adoption. There is no doubt of the attitude of the President and his administration toward the agricultural and commercial interests of the country. The thing that is up to us, and that is our part of the work, is to throw our influence with the men who represent us in Congress. Let this not be overlooked, for it means everything toward assisting the enterprise.

Here and There.

The American Concrete Company, with a capital of \$30,000, has been incorporated at Chicago for the manufacture of concrete pipe, posts, etc., by R. W. Lawson, W. C. Spaulding and G. H. Scribner, Jr.

The Ingersoll Cement, Rock and Building Company, of Ingersoll, Okla., has been incorporated with a capital stock of \$5,000 by B. B. Fees, W. F. McAfee, J. F. Fisher and C. A. Boody.

The Standard Concrete Stone Company of Elizabeth, N. J., with a capital stock of \$25,000, for the manufacture of cement blocks, artificial stone, etc., has been incorporated by L. F. Olde, J. H. Olde and Peter J. Olde.

Robert P. Hare & Co., Tague, Tex., are the proprietors of a modern concrete block plant and have many orders ahead. The use of concrete blocks in this section is a new one, but the outlook for its increase is most encouraging.

Concrete shingles, or cement shingles as they are called, is the specialty of J. H. Haines, of Western Avenue and Second Street, Marion, Ind. The shingles are diamond-shaped and cost about the same as pine shingles. They are storm- and rainproof.

Practicing as they preach is the motto of the Seiberger & Klitch Cement Block Factory, Hammond, Ind., who have just built a new addition to their factory here, using blocks of their own manufacture in this construction.

Cement sidewalks, concrete retaining-walls, cellars and every description of cement work is the line of the T. R. Fryer Company, McKays Rock, Pa., with offices at Eleventh Street and Broadway, West Park. They report an extremely busy and prosperous season, with plenty of work in view for 1908.

One of the latest contracts of the Eau Claire Concrete Company, Eau Claire, Wis., is the two-story 200x100 concrete block building which Lang & McNulty, contractors, are erecting for the McDonough Manufacturing Company, at a cost of \$40,000.

One of the progressive men of Beatrice, Neb., is Mr. J. S. Rutherford, who has the most complete plant for the manufacture of cement building blocks to be found in the West. In addition to his cement block plant, Mr. Rutherford makes a specialty of cement walks, and his operations are of a size to enable him to purchase cement in carload lots.

Cement posts is the specialty of P. McDonald, Hutchinson, Kan., who has several hundred of the posts, reinforced with four wires, now made up at his yard on the Santa Fe Railroad east of Maple Street. Mr. McDonald is so sanguine of the ultimate success of this commodity that he is now at work with the idea of forming a company to manufacture the same on a large scale.

The Wausau Street Railway Company, Wausau, Wis., are erecting a new concrete block building at the foot of De Kalb Street, 156x36x16 to the eaves, to be used as a storing or housing shed for cars not in use. The blocks were made by the Concrete and Supply Company of Wausau, using Alpha cement in double-airchamber blocks. The building will house fifteen cars and will be completed November 1.

Two carloads of machinery are already on the ground and eight more carloads are en route for the erection of a new plant for the manufacture of concrete building blocks by P. T. Lynch, Roseton, N. Y. This is a large plant and will afford employment to about 200 men. John B. Rose also contemplates the establishment at Roseton of a cement plant for the making of concrete blocks which will employ about 500 men. The plans for this latter industry will be completed this winter, and work will be started in the early spring.

Suffering Because of Ignorant Competitors.

ALTON, ILL., Oct. 1.—W. & H. Beiser, on Second Street, near the river, have a concrete block making plant and use Hercules and Coltrin machines. Their mixer is from the American Iron Works, Detroit. Talking with Mr. Beiser, I learned that the business in this line had, of late, declined, solely because of some parties engaged in the business making poor work. He said that no furring is needed where three-inch veneer block is used. The firm have put out both hollow and solid work, and are engaged also in concrete work for sidewalks, curbing, foundations, etc. For cement they use Atlas and some Universal, and have put out some work in which Medusa waterproofing was used, though he claimed to be able to do without waterproofing. Having been engaged in this line of work for over five years, and raised in the cut-stone business, he has had ample experience.

Quarries.

Suggests State Road Commission.

DES MOINES, IA., Oct. 8.—G. L. Cooley of Cleveland O., a Government good roads expert, was at the Statehouse today for the purpose of investigating the Iowa road laws and the condition of the State's highways. He says that the Iowa roads have not the reputation of being the best in the world and suggests as a remedy that a State commission should be established. Twenty-two of the States now have such commissions, and the good roads sentiment is strong all over the country. He says that Iowa has sufficient gravel and lime deposits to put her roads in good shape. Mr. Cooley came direct from Milwaukee, where he attended the Wisconsin State fair and addressed 1,500 delegates who gathered there to form a good roads association.

Live Movement in Illinois.

"Good Roads," was the keynote of a banquet held by the Illinois Manufacturers' Association in the new banquet hall of the Auditorium Annex, Chicago, on October 9. It was resolved to hold a good roads convention at Springfield the last week of January, 1908, or the first week of February, and to invite the various commercial, industrial and agricultural organizations of the State to send delegates for agitating the good roads issue. It is planned to indorse the policy which has been inaugurated by the State Highway Commission of Illinois.

This is the kind of action that puts public improvements across. Let every quarryman in the State take personal interest in this movement and never let up till a good, big appropriation is voted by the Assembly. Here is an example and suggestion to other States as well. Who will be the next to get busy?

ALTON QUARRIES.

Wishing to explore the quarry district of Alton, Ill., one bright, but hot afternoon recently, the Rock PRODUCTS man undertook the long walk along the line of the C. P. & St. L. Railroad necessary to accomplish the task. The objective point was Hop Hollow. For a three-mile stretch northeast along the railroad track there were exactly two objects to contemplate. On the right, rising sheer from the roadbed, were limestone cliffs ranging from 100 to 200 feet in height; on the left, the Father of Waters, bounded by the Missouri shore. The scenery was certainly magnificent, but the heat was great.

Reaching Hop Hollow, I found the quarry of the Blue Grass Crusher Company, H. A. Wise, manager. In the absence of Mr. Wise I talked with the foreman, and learned that the name of the quarry was owing to the fact that the owners were Kentuckians. The quarry has been operated for three years, and the cliff at this point, counting from the quarry bed, is about 65 feet high. The limestone rock is designed mainly for foundations and macadam—the latter being crushed in a No. 7 Gates crusher, of 600 yards capacity. The product of the quarry is shipped to Wood River, where it is rebilled to various sections of the country.

On the return journey, I stopped at the Job Quarry, but found this company shut down for the present. Gathering myself together and raising an umbrella to ward off sunstroke, I next reached Armstrong Quarry, Mr. Stevens manager, and I had a chat with the foreman, who told me the cliff was about 150 feet high. This company manufacture white lime, and there are veins in the limestone which analyze from 93 to 96 per cent pure lime. The stone is burned in iron casings, lined with firebrick. Coal is used for firing. A great deal of the output goes to the ammonia works.

The Queen City Quarry, H. C. Barnard manager, was next in order and the Rock PRODUCTS man was glad to rest himself within the little shanty which answers for the foreman's use in making shipping tickets of the output of the quarry, which, at present, is wholly macadam, crushed in a No. 7 Gates crusher of 500 tons daily capacity.

The quarries of Henry Watson and of the Alton Lime and Cement Company are close together, but the Rock PRODUCTS man did not meet either O. S. Stowell, president, or Henry Watson, secretary and treasurer. The foreman, Henry Gissar, however, took

me to the scene of operations. I saw a man engaged in playing a powerful stream of water upon the rubblestones at the foot of the cliff—washing it, Mr. Gissar said. Asking how high the water could be thrown, he obligingly directed the man to show me, whereupon he pointed the nozzle to the cliff, 75 to 90 feet high, and nearly reached the top. The nozzle opening is 1¼ inches, and yet with more pressure, Mr. Gissar said, he could throw a stream higher than the cliff. A pump on the river bank furnishes an ample supply of water free of cost, and water is a fine agent for stripping, as well as washing the dirt from the stone.

The company have three lime kilns, but are not making lime at present, being engaged in getting out building stone and macadam, and pulverized limestone for fluxing, which is shipped to the steel works. The quarry has some veins, interlined with flint, which analyze very high in lime, some of it going 98 per cent. Rand drills, operated by steam, are used, and the company have a No. 5 Allis-Chalmers crusher. Mr. Gissar stated that since the Chicago drainage canal was opened the stage of the river has been raised from one to two feet.

After passing the Alton Waterworks I noticed a steam barge and shovel and a couple of barges loaded with sand tied up at the river bank, and learned that sand is brought from sandbars up the river and at this point it is loaded in the cars for distribution via the C. P. & St. L. Railroad.

The Reliance Quarry, E. A. Hermann manager, is at some little distance from the business section of Alton, and is situated near the Big Four Railroad with which it is connected by a switch track. The company is engaged in crushing limestone for macadam and concrete work. The hill on which they are working is covered to a considerable depth with loam, which, of course, has to be stripped from the rock. On the occasion of my visit I was warned of heavy blasting about to be engaged in, the charges of dynamite being fired by battery wires. Seeing the men scampering in all directions, I hastened to crawl under a freight car, which was the nearest shelter I could reach, and soon heard a terrific explosion, followed by the noise of a shower of falling rock. The men afterwards told me that it is rather dangerous to be around a quarry at such times, for it is impossible to form much idea of the direction of the flight which some of the smaller pieces of rock may take.

A monster stone crusher costing \$100,000 is being erected at Six-Penny Falls in Chester County, Pa., and five miles of track are being laid to connect with the Pennsylvania Railroad at Monocacy, by the Keystone Stone Company of Philadelphia. New quarries are being opened at Six-Penny Falls, where a superior quality of stone for spalls is said to be found. It is said that it is the purpose of the company to supply trap rock to the State Highway Department to make repairs on State roads. Joseph Callahan of Reading is general foreman in charge of the construction. Philadelphia politicians are said to be interested in the enterprise.

The Big Quarry at Grafton.

The largest, and doubtless the oldest, quarry on the Mississippi River in this section is that of the Grafton Quarry Company at Grafton, Ill. It has been operated by its former and present owners for forty to fifty years. Under the guidance of Tom O'Keefe, the superintendent, I made a tour of the quarry and buildings.

The cliff at this point is over 100 feet high, and quarrying operations are conducted alongside of the C. P. & St. L. Railroad track and the river, both of which are utilized for transportation. About 35 feet of earth (which has to some extent been utilized for brick-making) has to be stripped off the rock, which is effected by washing by means of a pump on the river, and the water which is carried through a 6-inch iron pipe, 1200 feet in length, carries through a 1-inch nozzle a pressure of 80 to 90 pounds at the top of the cliff. For handling the stone to the cars and river the company have about one mile of narrow-gauge track and employ the gravity principle—the loaded car returning the empty one from the crushers, railroad or river bank, as may be required. The earth has also been used for filling in.

The quarries originally were operated almost exclusively for dimension stone for foundations for bridge piers, such as the Eads Bridge, and the largest office buildings such as the Security Building at St. Louis. Of late years the demand for such stone has decreased, and a much larger use of crushed stone has developed, through foundation stone is still largely shipped, some going for the new Roman Catholic Cathedral at St. Louis. The company is also furnishing stone for Government dams, and when the city of St. Louis built the waterworks, the stone used came from these quarries. This stone is known as magnesia lime and makes a dry job possible; conse-

quently it is regarded as the best building stone in this section. The company have donkey engines and derricks located at convenient points, and two Austin (Harvey, Ill.) crushers—one being No. 5 and the other No. 6, with a capacity of about 500 tons for both. The Austin rotary screens are also used, and Chicago pneumatic tools for drilling. The company have two Rochester Machinery Manufacturing Company's, four Mundy and three Ledgerwood hoisters.

Considerable difficulty is being experienced in securing a full complement of men, and for this reason the quarries are not being run to full capacity. The company has a repair shop and outbuildings for the storage of dynamite and powder.

The officers of the company are as follows: James Black, president; John S. Roper, secretary. Their offices are in the Wright Building, St. Louis.

Crusher Poetry.

Of course there's music in the steady roar of a gyratory crusher. Charley Ginter of Williamsburg, Pa., has the job of watchman at the crusher plant of the American Steel and Wire Company at that place. He reads a psalm or some other Bible verse every day and ROCK PRODUCTS regularly every month, like every other good quarryman. Anyhow he wrote the following song about the plant where he works, and it beats anything else that a quarryman has written in this generation:

Oh, there's the American Steel and Wire Co.
Widely known by name.
I'll get up and hist my turkey
And I'll welt the road again.

Harry Sparr is superintendent
And he talks very plain.
I'll get up and hist my turkey
And I'll welt the road again.

Our two bosses are gentlemen—
Zeb and Brownie are their names.
I'll get up and hist my turkey
And I'll welt the road again.

Our engineer is a jolly good fellow
And Hank Gorsuch is his name.
I'll get up and hist my turkey
And I'll welt the road again.

Shorty, he's the fireman.
And he keeps up the flame.
I'll get up and hist my turkey
And I'll welt the road again.

Cal Wagner is the blacksmith—
He works with might and main.
I'll get up and hist my turkey
And I'll welt the road again.

John Hoover is our mechanic
And he keeps pushing the plane.
I'll get up and hist my turkey
And I'll welt the road again.

Edgar Ake is the office man
And it's there he's got your name.
I'll get up and hist my turkey
And I'll welt the road again.

M. D. Pryor he is storekeeper—
He sells to all just the same.
I'll get up and hist my turkey
And I'll welt the road again.

Harry Chamberlain is the stable boss
And he is always after game.
I'll get up and hist my turkey
And I'll welt the road again.

Charley Ginter is the watchman
And he gets there all the same.
I'll get up and hist my turkey
And I'll welt the road again.

Oh! Go 'long with you, Harry Sparr.
For it ain't a-going to rain.
I'll get up and hist my turkey
And I'll welt the road again.

This is mighty good company
And they're working hard for stone.
I'll set down upon my turkey
And I'll make this place my home. —C. W. G.

The towns of Ansonia and Avon, Conn., have each voted \$20,000 for highway improvements under the State law.

A macadamized road between St. Louis and Kansas City will be completed within two years. Construction work will be begun next spring. The Missouri Legislature appropriated \$500,000 for the purpose at its last session. The road will be sixty feet wide. On its completion another extending from north to south through the State will be undertaken.

B. F. Keenan of Philadelphia has completed the equipment of his trap rock crushing plant near Little Rock, Ark. The concern will be known as the Charles M. Newton Trap Rock Company. The plant will have a capacity of 1,200 tons of crushed rock per day. Don O'Connor will be the local manager for Contractor Keenan. It is said to be one of the largest ballast and macadam plants west of the Mississippi River.

Unique Quarry Proposition.

On the banks of the Mississippi River, at the old and pretty village of Elsah, Ill., I found an interesting and unique industry in visiting the plant of the Western Whiting and Manufacturing Company, of which Alex Marshall is the general manager. In the absence of F. F. Bixby of St. Louis, on a trip to the South, I arranged to see Mr. Marshall at the plant. The mills and warehouse of the company are situated at the base of the carbonate cliffs, which rise almost perpendicularly to the height of 250 feet above the river, and furnish the raw material for their product.

Passing along the tracks of the C., P. & St. L. Railroad, which supplies a shipping outlet, I came first to the crushing plant and bins, which are installed in an old stone flour mill, 60 by 40 feet, built about thirty years ago, recently purchased by the company and annexed to their mill. All the machinery equipment is the Austin, which includes the crusher, elevator conveyor and rotary screen.

The crushed stone is passed along to the whiting plant, 300 by 40 feet, in which are the three grinding mills. In these the selected stone is ground by powerful mills in water, which is drained off every three hours. The process and machinery were installed from designs and plans of Mr. Marshall, who is a Scotchman and familiar with the methods employed in the old country, having entered upon the manufacture of whiting in 1884.

From the mills the material is conveyed to the kiln, which is about 100 feet in length and 30 feet in width, for drying. Next the material is broken up and bolted and conveyed to the storage bins, from which it is automatically packed in burlap sacks.

The capacity of the plant is 30 tons extra bolted gilders' whiting and Paris white per twenty-four hours' run—the finest ground impalpable powder possible to be produced by one of the best equipped plants in the country. Their product is used for the manufacture of putty, compo, picture frames, etc.

Besides the manufacture of whiting, the company runs a quarry plant, their quarry being equipped with Sullivan Machine Company's compressed-air drills, and in location and facilities exceptionally well adapted for the business of supplying crushed limestone. A feature of their quarry is the superior quality of the stone, being pure, crystalline, carbonate.

With respect to the manufacture of whiting, Mr. Marshall said there were no secret process; it was simply a matter of good, clean stone, handled with the proper appliances and with care, skill and constant supervision of the details of manufacture.

In the mill proper is an engine from the Ames Iron Works which was installed in 1884, and in praise of this engine I learned that only \$7 have been expended for repairs since it was put in. Two large Wrangler boilers are in use.

The whiting manufactured by the company is shipped all over the country, even to the Pacific coast.

Dr. Chabot, West Union, O., will open a stone quarry across the creek from that place, where the finest stone in Scioto County is said to exist.

The Culver road subway will be built for the New York Central Railroad in Rochester, N. Y., by John Johnson, a Buffalo contractor. The work will cost about \$200,000.

The Lehigh Mountain Granite Company of Vera Cruz, Pa., is erecting a double crusher. They expect to supply their ever increasing demand for crushed rock after things are in shape.

The new lime and sandstone quarry of the Colonial Iron Company at McConnellstown, Pa., has been opened. The first blast loosened 800 tons of rock. Wm. Pyles is superintendent of the new plant.

The Kelley Island Lime and Transport Company, Cleveland, O., are busy rushing their fleet of eight boats with cargoes of limestone and crushed stone, the former for use in the blast furnaces and the latter for concrete work, from their base of supply on Kelley Island to Cleveland, in view of the closing of navigation in the course of a few weeks. The company report an excellent season's business.

A. F. Emery has launched a new stone company at Twinsburg, O., with offices in Newburg, a suburb of Cleveland. Mr. Emery is general manager of the concern. The quarry at Twinsburg, thirty miles from Cleveland, produces sandstone which is being ground up into sand to be shipped to the blast furnaces for use as a flux in steel-making. The new concern is already doing a large business. Several new drills, derricks and cars have been installed in addition to a crusher.

Lime.

The National Lime Manufacturers' Association

Meets Semi-Annually.

Peter Martin, Huntington, Ind. President
A. A. Stevens, Tyrone, Pa. First Vice-President
W. B. Carson, Riverton, Va. Second Vice-President
T. H. Fleischer, Sheboygan, Wis. Third Vice-President
C. W. S. Cobb, St. Louis, Mo. Treasurer
A. J. Whiteford, Toledo, Ohio. Secretary

Official Organ, ROCK PRODUCTS

Enlarged Usefulness for the Association.

Secretary A. J. Whiteford of the National Lime Manufacturers' Association was in Chicago recently, after having covered most sections of the country where lime is manufactured, to bring all in touch with the interests of the National Lime Association—the man from Maine as well as the operator from Indiana. Mr. Whiteford is doing excellent work and trying to show the lime manufacturer the necessity of closer friendly relations between operators. Certainly there is not a lime manufacturer in any section who can afford to stay out of the fold, for the only way lime manufacturers can progress is by an exchange of ideas and close co-operation. No other industry of like importance can afford to be without a national association, and neither can you, Mr. Lime Man, no matter where you are located.

Plans for a new line of action will be formulated at the annual meeting, which will be called shortly, and it is to be hoped that each manufacturer will look over his books and satisfy himself as to whether he is getting all that is coming to him out of his business. If he finds a leak that he is not able to remedy, take the matter up with Secretary Whiteford, with the idea of receiving counsel from some other member of the association and such experts as have offered their services for the benefit of the lime trade, which will mean a greater and better lime association than ever.

Before the employment of Mr. Whiteford, this work was done by those whose time was largely taken up with other interests, but now that the association has a man who can devote his entire time to the correction of the evils of the industry, you should be a part of the association and keep him busy working out your problems. The maximum cost of membership in the National Lime Manufacturers' Association, at this time, is \$25 per annum. One item of information gained by reason of membership may help you to correct a fault in your business. Would it not be worth 100 times the membership fee, even if you have only a one-kiln plant? Some of the most enthusiastic and interested members of the association are small operators, but have contributed their share of information to some of the largest and are really the bone and sinew of this association, which has been in existence for four years.

The bound volume of the proceedings of each meeting is worth the price of membership in itself, and some of the back numbers can be had. The editor of ROCK PRODUCTS suggests that you get in touch with the new secretary of the National Lime Manufacturers' Association and see what we can do toward enlarging its usefulness.

Fine Demand in the West.

LOS ANGELES, CAL., Oct. 1.—V. R. Salinger, president and general manager of the Puntney Lime Company, whose plant is located at Puntney, Arizona, says: "We believe we have the manufacturing of lime down to a science now. We are able to ship 250 tons per month into the San Francisco market, which is between 800 and 900 miles from our shipping point." The vast amount of building operation on the Pacific Coast for the past year or more has made a great demand for lime, not only at San Francisco, but also at many other points.

The Nathan-Hicks Hydrated White Lime Company, Ste. Genevieve, Mo., has been incorporated with \$40,000, by J. W. Nathan, H. W. Hicks and others. They have a high calcium quarry proposition of no little merit.

Loss of Plasticity in High Calcium Hydrates.

BY H. E. BACHTENKIRCHER.

"Why do high calcium limes, which usually possess great plasticity when slaked in the ordinary manner, lose this plasticity when hydrated under existing methods?" This question has been put to the writer so many times that it prompted an investigation. The work is not completed as yet, but some interesting features have been disclosed.

It has been clearly established in the last few years by German investigators that calcium hydrate exists in two distinctly different forms, viz.: 1. Amorphous, or chalky. 2. Crystalline. These two forms differ widely in physical characteristics, and this difference in properties led the writer to make a microscopical examination of various high calcium hydrates on the market. This examination revealed that every sample contained both the amorphous form and the crystalline; in fact, the hydrates were mixtures of the crystalline and the amorphous forms in varying proportions. In addition it was discovered by practical tests that the hydrates which contained the greater amount of the crystalline form were less plastic and "worked less freely" than those with more of the amorphous.

With these facts established, the question then arose: "Does the presence of the crystalline form cause the hydrate to lose plasticity and 'work short'?" To get data on this feature, some lump lime was slaked very carefully, and at as low a temperature as possible, an excess of water being kept present throughout the slaking. The resulting putty was carefully separated, dried and examined under the microscope.

The calcium hydrate thus made was found to be largely of the amorphous form, very little of the crystalline being present. Upon testing the spreading qualities, remarkable plasticity was shown and the "putty" had no tendency to work "short." This tended to establish as a fact that the greatest plasticity is obtained when the least amount of the crystalline form is present. However, as a further confirmation of this some lime was slaked with steam at a very high temperature, whereupon an examination showed the calcium hydrate to be composed very largely of the crystalline form. Upon testing the spreading qualities this hydrate worked very "short" and possessed poor plasticity.

These observations seemed to indicate that the crystalline form when present diminishes the plasticity, and, further, that the spreading qualities are inversely proportional to the amount of crystalline hydrate present. However, complete data on this consideration are not yet available. Another feature noted was that, other things being equal, the higher the temperature at which slaking takes place, the greater the amount of the crystalline form in the resulting hydrate.

In this connection it must be remembered that when a particle of lime unites with a particle of water a certain amount of heat is always generated, and that this "heat of combination" is always constant, so that, to lower the temperature of slaking as a whole, some mechanical arrangement must be employed whereby the temperature is reduced.

For instance, if lime is slaked with an excess of water, as fast as the individual particles of lime give off their heat of combination, the excess of water present absorbs it, and, as a result, the whole mass of water and "lime putty" has its temperature slightly increased, but each particle of lime has its temperature rapidly lowered. Consequently the instant a particle of lime unites with a particle of water the highest temperature is experienced and the temperature then is rapidly reduced by the excess of water present.

In the manufacture of hydrated lime there is usually an excess of lime present, just enough water being added to slake the lime and leave it a dry powder. The heat of combination of the lime with the water is the same in this case, but there is nothing to reduce the resulting temperature. The water added is united with the lime throughout the entire mass at the same time; consequently, the heat, instead of being absorbed by the excess water, is simply held and given off by radiation. Lime hydrate being a good non-conductor, this radiation therefore does not take place very rapidly, so that throughout most of the mass a high temperature is maintained for some time.

The problem, then, in the manufacture of a high calcium hydrate seems to be one involving a mechanical method of absorbing the heat of combination in such a manner that the hydrate as fast as formed is rapidly cooled so that the formation of the crystalline calcium hydrate is minimized.

Extensive tests are being carried out by the writer going more deeply into this phase of crystalline structure, and in the near future some accurately

measured results will be available. However, this brief examination is of some interest, and, if supplemented by fuller and more complete data, perhaps may throw a little more light on the manufacture of hydrated lime.

The influence of the temperature of burning and also the duration of burning of high calcium limes will be taken up thoroughly in this connection, for it is evident, from experiments carried on so far, that these influence the formation of crystalline hydrates to some extent.

New Plant in Wisconsin.

MANITOWOC, Wis., Sept. 30.—The Valders Lime and Stone Company has been incorporated, \$28,000 capital, by B. Brennan, Ole Knudson, Thomas O'Brien, Theodore G. Larson, Frank Einberger and John O'Brien, who reside in the little village of Cato in this county. They will operate a quarry located at Valders for the manufacture of lime and crushed rock.

A Very Pleasant Exception.

KANSAS CITY, Mo., Oct. 2.—The modern newspaper man is compelled to run a gauntlet of clerks and attendants, pass in his pasteboard and possess his soul in patience until his turn arrives for meeting the mighty men of manufactures and commerce. He will do well to con his story while in waiting, and come right to the point when he notes that the gentleman he is after has one eye on the clock and the other on his caller. There are exceptions to this experience, however, and though W. B. Hill, president of the Ash Grove Lime and Portland Cement Company, is a very busy man, yet as one of the earliest advertisers in ROCK PRODUCTS and its constant friend, he was quite willing to entertain a representative who put in an appearance at his office in the Long Building the other day.

Mr. Hill said they could manufacture more lime than they were doing and would like to do so. The trouble, however, is to get cars for what lime, both common and hydrated, must be shipped. The transportation factor is the controlling one in business at the present time, since if you cannot get enough cars for the output of your factory you must cut it down to meet the exigency.

Mr. Hill gave the ROCK PRODUCTS man their interesting folder setting forth the merits of hydrated lime, to which attention has been drawn in these columns, and remarked that he had just returned from a two weeks' visit at Chanute, where he had been looking after the operations of the builders of the company's new cement plant.

Reorganization Effected.

JEFFERSON CITY, Mo., Sept. 28.—The old Missouri River Lime Company has been reorganized, capital \$25,000, by J. J. Helfer, C. J. Miller and Louis Rephlo of Jefferson City, and Herman Browning of St. Louis. J. J. Helfer was elected president and general manager and Mr. Rephlo secretary and treasurer. The quarry and plant are located at Wooldrige, Mo., on the Missouri River. They are adding two new kilns, which will give them a total capacity of 300 barrels per day, which will be taken care of by the demand already being developed. The lime is high calcium, practically 99.8 per cent.

The Bassler Limestone Company, West Myers-town, Pa., has been organized by C. B. Funck, I. L. Beckley and H. T. Atkins. C. Bertram Funck will be the quarry superintendent.

The Charles H. Mead Stone Company, Woodbury, N. Y., was incorporated with \$100,000 capital, to crush rock. Directors: Frank L. Mead and Henry L. Winters of Cornwall, and Charles J. Brooks of 870 Ninth Avenue, New York.

The Rockland-Rockport Lime Company of Maine have purchased a deposit of lime rock near Scranton, Vt., which they will shortly equip for operation. The property is said to have the advantage of open-face quarrying of ledges so high that gravity can be very largely employed in handling the raw material, and besides this the transportation facilities of the location are unsurpassed.

The Moline Lime, Stone and Cement Company, whose quarry and plant are located at Moline, Kan., have recently installed natural gas from wells located on their premises for the burning of lime, as they consider that they now have a dependable flow. They have greatly improved their quarrying facilities, and with plenty of help the prospects are most encouraging. The company have begun the erection of twenty tenement houses for their workmen.

Cement.

Brace Up.

"Do you manufacture cement?" the Rock PRODUCTS man asked. "Yes, we manufacture cement." "Do you sell cement or do you give it away?" "Sometimes."

This seems to be the spirit of some manufacturers at the present time—giving it away—especially with operators who are endeavoring to unload their surplus, though the carload trade is in fairly good condition. The telegraphic demand is quite active, indicating that dealers, anticipating the bottom of the market, allowed their stock to get low and are filling up for fall business before the snow flies. With the figures of the past month, had the manufacturers worked out the policy encouraged by some of the



JUSTUS COLLINS,
PRESIDENT SUPERIOR PORTLAND CEMENT COMPANY,
CHARLESTON, W. VA.

large Eastern operators to curtail the production this year, there would be absolutely no excuse for present prices.

It has always been the idea of ROCK PRODUCTS that regulation in the price of cement would be a good thing for the business. Suppose cement were \$1 or \$1.10 net at the mills in the Lehigh district, and proportionately higher in the West and Middle West? Everybody would make money, the dealer would know where he was at, the contractor could intelligently make contracts and know whether he was protecting himself by specifying a proper price in his contracts, and there would be none of this fluctuation in values from cost to the highwater mark. When you get down to the cost mark you are encroaching upon dangerous ground—the capital account.

Some of our friends in the cement business, in order to land a 10,000 or 20,000-barrel order during the past month, sold at a price that will take a little piece out of the profits made early this year. Of course demand and supply regulates the price of any commodity, but if the sales departments of the various cement companies do not get in closer touch and cut out this tumbling over each other to make prices without consulting the cost sheet, they will surely suffer. It is an easy matter to drop the price 10 cents a barrel, but quite a difficult proposition to raise it 5 cents.

The unfortunate feature at this time is that we are almost at the end of the building season, and the heritage of next season's business will more likely be a walking ghost than a healthy urchin with shoulders thrown back and spirit enough to start the

new year determined to make a profit or not sell goods. We are of the opinion, expressed in two previous issues, that there is no reason for present conditions. Here we are with good crop conditions, yet in some building material lines trade has almost stopped. If somebody would put the financial writers, who to some extent are dominated by stock-jobbing gamblers, in a dungeon, it would be a good thing for the business world. It is this thundering cry of "wolf, wolf," that is responsible.

At one of the largest stock-yards in the country (where lumber has always been used for cattle pens) the entire yards district recently contracted for 250 miles of reinforced concrete fence, put up for less money than the lumber alone would have cost, to say nothing of the \$4 and \$6-a-day carpenters. If concrete fences and other buildings can be put up for \$3 a cubic yard with cement at \$1.35 net at the mill (which was the price at the time the contract was made) it is certainly cheaper than using lumber, and if a regular price was maintained everybody would be satisfied and the industry would be benefited. Taking off 25 cents at the mill cuts out all profit for the majority of the concerns and is not creating business.

Many contractors claim that the high price of building materials is the reason why more new constructions have not been projected. The point is, that if the speculative element in the building trade can be eliminated, it will be a great deal better for all concerned. Every one concedes that New York City is making great strides in population, but none of us can understand how fifty miles of apartment buildings can be filled within three years' time in any city, no matter how fast it grows, without leaving vacant houses elsewhere. This is all due to speculation. The cement industry has suffered the same as the building stone industry from this speculative element; but this is no reason why there should not be some reasonable point agreed upon where manufacturers of cement should stop, instead of going as low as 80 cents or even lower, as is the case in the Lehigh Valley.

We are glad that some of the best companies in the business are not following this lead, and we have just this to suggest: The elimination of the free lances in the sales departments who make any low price they see fit will mean a betterment of conditions in 1908. Isn't it better to shut down the mill and pay overhead charges when the bins are full of clinker and finished cement than to sell the same cement at 10 cents a barrel below cost? Of course some manufacturers say, "Oh, well, we can make money at 70 cents." They, however, have not taken into consideration the overhead charges.

It is all very well for the man who is smarter than anybody else, and who has peculiar local conditions in his favor, to sell cement cheaper than other people, but he should keep in mind the prosperity of the industry as well as the payment of his own notes. Two or three bad breaks by the sales department of a cement concern break the market to the extent of 20 cents a barrel, to overcome which it may take at least twelve months. To an industry producing 50,000,000 barrels of cement annually the loss of 10 cents a barrel means not only the elimination of some individuals from the management of the business, but absolutely prevents anybody making money, no matter how good local conditions may be.

Selling Company Disbands.

LOUISVILLE, Ky., Oct. 15.—The officers of the Western Cement Company of this city have decided to dissolve that organization on the 7th of November next. This company has been in existence for the past twenty years, and has been recognized as the sole sales agent of the natural rock cement mills located in Clark County, Ind., just opposite this city on the other side of the Ohio River.

T. A. Courtenay, secretary and treasurer of the company, has sent out notices to the effect that on account of the decline in the demand for natural cement which has been superseded by that for Portland cement, it was deemed wise to dissolve the organization. The company was incorporated in this State with a capital stock of \$30,000. The present officers of the company are: J. B. Speed, president, and T. A. Courtenay, secretary and treasurer. R. A. Robinson was formerly vice-president of the company, but resigned that office several years ago, no one having been elected his successor.

Originally an arrangement was made with the mills in Clark County whereby it was agreed to close down all but four of the eighteen mills at that time in operation, and permit them to supply the demand, allowing the others a quota of the profits from the total sales. These mills include: Clark County Mills, Lion Mills, Flag Mills, Standard Mills, Mason's Choice Mills, Golden Rule Mills, Hoosier Mills, Globe Mills, Crown Mills, Eagle Mills, Ohio Valley Mills, Silver Creek Mills, Black Diamond (railroad)

Mills, Black Diamond (river) Mills, Falls City Mills, Queen City Mills, Speed's Mills and the Hulme Mills.

Owing to neglect consequent upon the idleness of the mills that have been out of commission for years it will be necessary to make extensive repairs should the owners decide to resume operations. In the event that they do not resume operations those mills that have continued operations, namely, the Speed and Belknap mills, will have the bulk of the business in Louisville cement throughout the country. The average capitalization of the smaller mills in Clark County was from \$25,000 to \$50,000, making a sum total for all the mills of \$750,000, which will be a total loss in the event that the owners decide not to resume operations.

Pressimism vs. Facts.

The advertising of the foreclosure sale of the Alabama Portland Cement Company's plant at Demopolis, Ala., will have, according to the statement of a local daily in that locality, "a tendency to check the cement industry throughout the South, especially in the middle Alabama region, where there is an inexhaustible quantity of raw material."

Right on the heels of this pessimistic expression comes the news of the organization of the Van Dorn Portland Cement Company, with a capital stock of \$1,250,000, by J. D. Riggs, Selma, Ala.; J. L. Means, Shreveport, La.; James Bradshaw, New Orleans, La., and B. F. A. Saylor, Rome, Ga. J. L. Means is president of the company, W. J. Bayersdorfer, superintendent, and they have purchased cement property at Van Dorn for the establishment of a good-sized plant at that place.

In view of the fact that the cement industry is one of the prominent factors in the commercial progress of the new South, certainly the sale of the Demopolis plant will not retard the growth of this industry, pessimistic opinions to the contrary notwithstanding.

To further strengthen this argument, preparations are now being made at the plant of the Standard Portland Cement Company at Leeds, Ala., whose present output is 400 barrels a day, to install equipment to considerably increase the present capacity.

On the property of Joseph Bertino, at Jenny Lind, in the vicinity of Ft. Smith, Ark., a large deposit of cement rock and limestone has been found, experiments are being made, and ere long ground will likely be broken for another producer of the world's greatest building material.

Reduction of Freight Rates.

The Southern Pacific has reduced the rate on cement to 43 cents per 100 pounds from Mankato, Minn., to California terminals, applicable through the Sioux gateway.

The company will also put into effect the same rate of 43 cents per 100 pounds from Austin, Minn., to California terminals, in carloads of not less than 40,000 pounds, making it applicable via Council Bluffs and Ogden, in connection with the St. Paul, or the Chicago Great Western and the Union Pacific.

From Distant New Zealand.

Far-off New Zealand and its doings were the foremost subject of conversation with our genial friend W. J. Wilson, superintendent and engineer of the Wilson Portland Cement Company, Ltd., Warkworth, Auckland, New Zealand. This is Mr. Wilson's third visit to America and was made chiefly for the purpose of procuring additional machinery.

The plant at Warkworth produced in 1903 some 750 barrels weekly of first-class Portland cement, and with the machinery now on the way, in which are included a 100x8-foot kiln of the Allis-Chalmers type and Fuller Lehigh mills to be used on the raw material, their capacity will be considerably increased. The raw material at this point consists of a cement rock very high in lime, necessitating simply the addition of a small percentage of carbonate to produce the required lime element for the high grade of Portland cement manufactured. This additional carbonate is procured from the clamsheils found in that district.

Natural cement is still being made by the company under the supervision of W. J. Wilson. They also make high-grade lime. Mr. Wilson's visit was also for the purpose of securing proper machinery for a hydraulic plant to hydrate the high carbonate lime produced by his concern.

New Zealand is quite progressive, especially in building lines, evidenced by the fact that very little storage capacity is taken into consideration by cement manufacturers there, because the demand does not permit of accumulation of any stock on hand. All of the government retaining walls and work of a similar character are done with concrete, and one of the most important engineering works there is a bridge with a 360-foot span to be erected by the Ferro Concrete Company, under the Hennebique system of Auckland.

The cement to be used, of course, will be that produced by Mr. Wilson's company.

Making Cement in Oklahoma.

The plant of the Dewey Portland Cement Company at Dewey, I. T., has recently entered the field of producers. The head officers of the company are located in the Scarritt Building, Kansas City, in charge of President Tyler and Vice-President Williamson. It is the first Portland cement plant to be completed in the new State of Oklahoma. It is electrically driven throughout and the power is generated by gas engines, the power plant equipment consisting of four large, twin-tandem, double-acting Snow gas engines, direct-connected to 60-cycle, 3-phase alternators.

The plant is located in what is perhaps the greatest natural gas field in the United States. A well of 60,000,000 cubic feet per day and another of 78,000,000 feet capacity are of record, while wells of 20,000,000 to 30,000,000 feet are not at all uncommon. These figures are almost too large for comprehension, but it will give some idea of the field.

The quarry proposition is worthy of mention. The limerock is of a very hard and dense variety and occurs in a stratified formation in a bluff. There are about 200 acres of this rock presenting an open face of a mile and a quarter. The rock is handled by a Marion steam shovel with a dipper of 2½ cubic yards capacity. The rock is transported to the plant by two oil-burning locomotives and twenty-four ten-ton cars. In order that the raw material may be handled without any hand labor, the company installed the first No. 10 crusher every put into a cement plant. It is a McCulley, built by the Power and Mining Machinery Company, Cudahy, Wis., and has a capacity of 700 tons per hour, the weight of the crusher being 200,000 pounds. As the feed opening on this crusher is 24" by 198" it will handle any rock that comes out of the quarry. It is supplemented by two No. 5 McCulleys.

Of course it is a dry process plant, and the raw grinding is done by 6-foot diameter tube mills and a kominuter. Five 8' by 100' kilns are used. Unusual capacity is being gotten from these kilns, as natural gas is the fuel, air-feed being furnished each kiln by individual fans driven by a direct connected motor.

Storage arrangements have been installed in connection with each and every step in the process of manufacture; for instance, two steel tanks 40 feet high are provided for the stone as it comes from the large crusher. Three steel tanks 40 feet high are provided for the rock and the shale as it comes from the dryers. A large reinforced concrete tank of 5,000 tons capacity takes care of the cement composition after going through the raw grinding. After being burned, the clinker is held in a reinforced concrete clinker storage of 16,000 tons capacity.

The shipping service is excellent, being located on the A. T. & S. F. and M. K. & T. systems and having track connection direct with both roads. The loading-tracks alongside of the cement warehouse have a capacity of more than fifty cars. This plant has a capacity of 2,500 barrels per day and has a good outlet to the South. It is already a factor in the trade.

Cement for the Isthmus of Panama.

The question of purchasing cement for the Isthmus of Panama in clinker form in this country has been under consideration. It would then be transported crushed and ground in the mills located within the Zone, and thus avoid the cooerage cost. Bids will probably be requested soon for, first, furnishing cement, delivered in barrels or bags, at Colon; second, furnishing it similarly packed, and delivered at any port on the Atlantic, Gulf or Pacific coasts, and, third, for furnishing it on the Isthmus in packages provided by the commission. This method would probably involve making the cement clinker in the States, shipping it to the Isthmus and grinding it there. The results of these bids will, of course, determine the policy of the commission in the matter.

A. M. Hoover has been appointed sales manager of the Alma Portland Cement Company, Wellston, O.

The Marquette Cement Manufacturing Company, Chicago, has increased its capital stock from \$350,000 to \$700,000.

W. J. Young, formerly chief engineer of the Lehigh & New England Railroad, has been appointed chief engineer of the Alpha Portland Cement Company at Martin's Creek, Pa.

Ernest R. Ackerman, president of the Lawrence Cement Company, No. 1 Broadway, New York City, enjoyed the rather unique distinction of being the only cement man aboard the Lusitania on its maiden run to this country.

The Lawrence Cement Company, of Pennsylvania, have taken advantage of the little lull in the Eastern market to have a general housecleaning at the mills at Siegfrieds.

The National Cement Company have let the contract for their new plant to be erected at Carpenterville, N. J., to the Traylor Engineering Company, 2 Reotor Street, New York City.

The American Cement Company of New Jersey redeemed \$32,000 of its bonds on October 1. This is the eighth annual redemption of bonds by this company and reduces the original issue of \$1,000,000 to \$728,000 now outstanding.

The Nazareth region of the Lehigh Valley had a merry-making, recently presided over by Superintendent F. B. Franks of the Bath Portland Cement Company, in the form of a clambake at Bath, Pa., where 350 guests were entertained.

James L. Bernard, formerly sales manager of the Alma Portland Cement Company, has been appointed Northeastern representative of the Edison Portland Cement Company, with offices at 79 Milk Street, Boston, Mass.

Two new brands, novel in character yet indicative of strength, without the glare of many now in use, are the Grasshopper brand of the Fredonia Portland Cement Company, Fredonia, Kan., and the Mule brand of the Missouri Portland Cement Company, St. Joseph, Mo.

William Frank Hall, who has been connected with the Bradley Pulverizer Company, selling the Griffin mill, became associated on October 15 with the Lehigh Car, Wheel and Axle Works, manufacturers of the Lehigh-Fuller mill, and took charge of their New York office at 111 Broadway.

Another addition to the cement-producing field is the Dixie Cement Company, of Copenhagen, Tenn., which will likely come into bearing early in November. The capacity of the plant is 4,000 barrels a day, but the output will not reach this amount until the quarry is in proper shape early in the spring.

The pulverizing machinery for the 2,000-barrel plant now in course of construction at Chanute, Kan., by the Ash Grove Portland Cement Company, will be supplied by the Lehigh Car Wheel and Axle Works, Catasauqua, Pa. The Hunt Engineering Company have charge of the construction of the plant.

Geo. P. Dieckmann, formerly connected with the Peninsular Portland Cement Company, Jackson, Mich., and the Empire Portland Cement Company, Warners, N. Y., has been appointed chief chemist of the Northwestern Portland Cement Company (of the Cowham System) at Mason City, Ia.

The Hecla Cement Company, Bay City, Mich., are taking time by the forelock regarding the labor question, seventeen families of Hungarians having recently arrived there from the Lehigh region to work in the raw-material end of the Hecla plant. This is the class of labor universally used in the many cement plants of the Lehigh Valley.

Marengo, Ind., is the spot selected by E. L. Buell, formerly president of the Colonial Portland Cement Company, at Warton, Ont., for the construction of a Portland cement plant with a capacity of 3,000 barrels a day. The present plans cover the construction of a plant with ten 110-foot rotaries with a capacity of 300 barrels each twenty-four hours.

A municipal cement plant of 1,000 barrels per day capacity is proposed for the cement for the construction of the Los Angeles Aqueduct and accompanying works. Bids for this plant were opened October 7 and the General Electric Company of Schenectady, N. Y., landed quite a large order. The specifications call for three rotary kilns, crushers, pulverizers, driers, conveyors, elevators, cars, pulleys and shafting. The plant will be located at Telachapi, Cal., and is the first cement plant built by a city and the second built at public expense. The other publicly owned plant is supplying cement for the Roosevelt Dam, near Phenix, Ariz., and was built by the United States Reclamation Service.

The Altoona Portland Cement Company, 605 Dwight Building, Kansas City, Mo., contemplate the erection of a 1,500-barrel plant at Altoona, Wilson County, Kan., on the Missouri Pacific Railroad and near the Santa Fe and Southwestern traction line, in course of construction, which will build to the mill. Officers: President, Thomas A. Parker, livestock commission merchant, Kansas City, Mo.; vice-president, Wm. E. Shearer, director and general Eastern sales manager of the United States Gypsum Company, of Cleveland, O.; second vice-president, P. C. Young, Fredonia, Kan.; secretary, M. E. Richardson, Kansas City, Mo.; treasurer, H. A. Butterfield, Minneapolis, Minn.; assistant treasurer, C. M. Shearer, Minneapolis, Minn. Capitalization, \$600,000 preferred, \$1,400,000 common stock. Victor Bentner, Westinghouse Building, Pittsburgh, Pa., is designing the plant and will have charge of the construction work. Limestone and clay will be used. Natural gas fuel.

Moves to Wider Field.

William H. Ford, Louisville, Ky., has been elected second vice-president of the William G. Hartranft Cement Company of Philadelphia, and first vice-president and general manager of the William G. Hartranft Company of Canada, with general sales offices located in the city of Montreal, where they handle the entire output of the Vulcan cement plant, located near that city. Mr. Ford is a brilliant young man, still under 30 years of age, and has carved his way to the front of the cement business by his personal qualities and indomitable zeal.

He first entered the cement business on January 1, 1903, as salesman for the Carolina Portland Cement Company at Charleston, S. C., his native city, when scarcely 24 years of age. One year later he was placed at the head of the Atlanta sales office of the same company in the capacity of assistant manager of sales, in which position he continued for two years. When the plant of the Kosmos Portland Cement Company was completed, he became identified with that concern as the manager of sales and has made a record worthy of emulation. He will assume his new duties November 1.

Mr. Ford made many warm friends during his residence in Louisville and throughout the South, and



W. H. FORD, WHO GOES TO MONTREAL.

many are the regrets that his new connection will call him away from the scenes that now are only complete with his presence.

We bespeak for Mr. Ford in the new field of his activities the same appreciation in which he has been held by the wide circle of friends and business associates that he has attracted to himself in the South.

But recently we recorded the sad death of Robert Horner, vice-president and treasurer of the Kosmos Portland Cement Company, with whom Mr. Ford was most closely connected in marketing the product of that concern. His place in the company has been filled by his brother, Charles Horner, who will be the vice-president and sales manager for Kosmos, and C. M. Timmons succeeds Mr. Ford as the traveling representative of the sales department. Mr. Timmons is an experienced salesman, having been connected in that capacity with the Carolina Portland Cement Company. Recently Mr. Ford visited all of the customers of the Kosmos Portland Cement Company, introducing Mr. Timmons as his successor. Everywhere he was cordially received, so that Mr. Ford feels that he has left his mantle to his successor under pleasing conditions.

The Fuller Engineering Company have the contract of a 4,000-barrel mill for the Allentown Portland Cement Company, to be located at West Copley, Pa. Work will be carried on during the fall and winter, and the plant is expected to come into bearing in July or August next. The Fuller Engineering Company also have a contract for the plant of the Matchan Portland Cement Company to be built at Evansville, Pa., and the Blue Seal Portland Cement Company, at Courtney, Mo.

Makes Specialty of Block Silos.

EFFINGHAM, ILL., Oct. 21.—J. L. Klemeyer was born in Germany, the country which has perhaps furnished the United States with more good material for making thrifty, intelligent and law-abiding citizens than any foreign nation. I found he was an excellent specimen of the young men of the Fatherland, alert, ambitious and progressive, possibly largely from contact with the activities of what was to him a new country. Though for some time and at present, while the lumber mills are running, a salesman on the road, he has a concrete block plant which, from a very modest start, is gradually assuming quite important proportions. He has a skillful man who has been working at concrete jobs for the past five years, and those who pooh-poohed the loudest at the earliest job are now the best customers for Klemeyer's blocks. He has a Pettyjohn machine, uses Bedford Portland cement and Du Pont River sand. Klemeyer rightly regards it important to be very particular concerning the quality of the sand used.

The dairying interest around Effingham is an important industry and the use of silos is quite general. Recently Klemeyer constructed for a leading farmer a silo, round in shape, of concrete blocks, and I inspected a few of the blocks he had left over, which were convex. He said if the farmers were satisfied that this silo was a success, he expected to build thirty to forty another season. As such a structure is an ideal one for a wet feed, and will overcome the objection to the use of silos on the part of farmers that have not adopted them, Klemeyer can safely count on lots of business. A good silo is a moneymaker for the dairymen. Klemeyer has promised to furnish a photograph of this silo, two-thirds of which is above ground. In residence building of concrete block construction he advocates the use of furring for the plaster job.

Constructing New Concrete Kilns.

The Cadillac Manufacturing Company, Cadillac, Mich., who lost their dry kilns and storage-rooms by fire recently, are constructing new concrete kilns to take the place of those burned. These kilns, when completed, will have a capacity for drying 20,000 feet of green lumber daily, a sufficient amount to produce 10,000 sets of 17½-inch heading, or 15,000 sets of keg heading.

The construction of dry-kiln walls of concrete blocks offers a field of usefulness where no other material is anything like as good. The alternate heating with steam and cooling again by throwing the kiln open to discharge the dried lumber improves the quality of the blocks rather than causing deterioration, as in the case of any other material. The fire-resisting qualities of the blocks make them invaluable for this purpose. The roof of the kiln can be made of concrete also by springing an arch from the two side walls, using courses of properly beveled blocks or light slab construction. There are a great many dry-kilns and steaming-boxes at woodworking plants now being put in of concrete blocks.

The Arthur Koppel Company, Machesney Building, Pittsburg, Pa., with sales offices in New York, Chicago and San Francisco, have issued a booklet entitled "Portable Industrial Railways," which is fully illustrated to show the completeness and perfection that they have attained in laying quarrying and mining trackage, with dump car equipments for every possible industrial use—turn-tables, Y's, frogs, and sections of straight track, with light steel ties, so that the tracks can be diverted conveniently and economically to the point where the work is concentrated. The modern application of this kind of equipment in the construction of large factory plants and commercial buildings, as well as railroad construction, and factory and furnace uses, makes this booklet an indispensable part of the literature which engineers must read and digest if they expect to keep their ideas up-to-date. The economies of plants provided with such equipment in continuous operation yield a splendid dividend upon the investment, for the reason that a large fraction of the labor feature of quarrying or mining is in this way completely eliminated. Some of the most important engineering feats of modern times would have been well nigh impossible had it not been for the Koppel equipment of portable industrial railways, of which the source of usefulness is practically unlimited, so that the system may be called complete for every purpose.

Heavy Construction.

DREDGING.—Sealed bids will be received until October 30 for dredging in Providence Harbor, R. I. Address J. H. Willard, Lieutenant Colonel of Engineers.

LOCKS AND DAMS.—Sealed bids will be received until November 25 for building locks and dams Nos. 14 and 15, Black Warrior River, Alabama. Apply for information to H. Jervey, Major of Engineers.

BRIDGES.—Sealed bids will be received until November 15 for the construction of 34 steel bridges in connection with the Lower Yellowstone project, North Dakota and Montana. For particulars address United States Reclamation Service, Washington, D. C.

DREDGING.—Sealed bids will be received until November 15 for dredging in the Delaware River. For particulars address J. C. Sabford, Major of Engineers.

LEVERS.—Sealed bids will be received until November 16 for the construction of 248,000 cubic yards of levee work opposite Pine Bluff on the Arkansas River, Ark. Apply for information to William D. Connor, Captain of Engineers.

CONCRETE CURBING.—Sealed bids will be received until November 6 for installing concrete curbing for roads at Fort Wright, Wash. For information address B. T. Scher, First Lieutenant Third Infantry, Constructing Quartermaster.

RAILROAD.—The Cleveland, Cincinnati, Chicago and St. Louis Railway will build a branch road from Evansville to Mt. Carmel, Ind. W. M. Duane, Chief Engineer.

RAILROAD.—The Northern Pacific will build a branch line from Tenino, Wash., to Tacoma. W. L. Darling, Chief Engineer, St. Paul, Minn.

ASHLAND, O.—Bids are asked until November 4 for furnishing materials and constructing the McClintock Bridge in Clear Creek Township, to consist of 45-foot steel superstructure and stone abutments. E. B. Westover is County Auditor.

VIADUCT, TEX.—A viaduct will be built over the St. Louis, Iron Mountain and Southern Railway tracks from Broad Street to College Hill, Texarkana, Tex. The structure will be nearly a quarter of a mile long and is estimated to cost \$40,000.

BRIDGE.—Bids will be received until November 8 for the construction of a bridge across the Sacramento River, a mile above Castle Crag, Shasta County, Cal. Address the Clerk of the Board of Supervisors, Redding, Cal.

RESERVOIR.—Plans are being prepared by E. F. Munson, 12 Sheldon Street, Norwich, N. Y., for a reservoir and filtration plant at Bainbridge, N. Y.

IRRIGATION CANAL.—We understand that the North Platte and Encampment Canal Company have employed Charles Hansel and Company, 43 Wall Street, New York City, to prepare plans and estimate for the construction of an irrigation canal for 93,000 acres, covering the land south of Saratoga, Wyo., to the State line.

WATER SYSTEM.—The Water Commissioners of Camden, N. J., will receive bids until December 17 for improving the water supply system and increasing the daily supply from 17,000,000 gallons to about 23,000,000. Joseph Potter, Chairman of the Water Department.

PAVING.—The City of Newbern, N. C., has voted \$50,000 in bonds for paving streets with concrete, and curbing same with granite. C. J. McCarthy is chairman of Street Committee.

SEWER SYSTEM.—The city of Blacksburg, Ga., is considering the issuance of \$50,000 in bonds for the construction of a sewer system. Address the Mayor.

SEWERS AND PAVING.—Greenville, N. C., has voted \$25,000 for the construction of a sewer system and for paving. For information address the Mayor.

SEWER SYSTEM.—Madison, Ga., has voted bonds for \$50,000 for construction of sewer system. Address the Mayor.

PAVING.—Sealed bids will be received until November 15 for the laying of 170,700 square yards of clay or shale block, sheet asphalt, bitulithic, wood block or macadam pavement, and 115,950 lineal feet of concrete curbing in the city of Pensacola, Fla. For information address L. Hilton Green, Chairman Board of Bond Trustees.

Use Limestone Products Exclusively.

MATTOON, ILL., Oct. 2.—Michael & Hurst are engaged in the manufacture of concrete blocks. They have an ideal machine and use Lehigh Portland cement. I found they use crushed limestone altogether, which they regard as being preferable to a mixture of concrete and sand. It certainly makes a light-colored block. In making blocks their rule is one to four, and average eleven blocks to the sack of cement. All their product thus far has been used for foundation work.



The Clyde Hydrator

is the accepted standard of highest efficiency, economical operation, positive results and general all around serviceability in hydrating machinery

There are more of them in use than all others put together

They have proven their merit under all conditions

We will furnish full information, booklets and interesting data on your request

"We like to answer questions"

CLYDE IRON WORKS

Manufacturers

DULUTH, MINN.



The Buckeye Fire Clay Co.

Manufacturers of

Sewer Pipe, Flue Linings, Chimney
Tops, Fire Brick, Grate Tile, Ground
Fire Clay, Wall Coping, Etc.


UURICHVILLE, . . OHIO

HIGH GRADE

FIRE BRICK

For Cement Works, Lime Kilns, Cupolas, Steel and
Iron Works of every description :: :: :: ::

Louisville Fire Brick Works, K. B. GRAHN, Prop.,
Highland Park, Ky. P.O.



DRYERS
OF EVERY TYPE
CONSTRUCTED FOR ALL PURPOSES.
AGENTS FOR BISHOP WATER JACKETED FURNACE FRONTS
UNITED STATES DRYING ENGINEERING CO.
66-70 BEAVER ST., NEW YORK, U.S.A.

HENRY S. SPACKMAN ENGINEERING CO.

Official Chemists, National Association of Manufacturers of Sand Lime Brick.

HENRY S. SPACKMAN, Pres. Dr. E. W. LAZELL, Vice Pres.
H. O. DUERR, Consulting Engineer.

Lime and Sand-Lime-Brick plants designed, constructed and
superintended. Established plants examined and improved.
Properties investigated and Physical and Chemical reports
made. Chemical and Physical reports of all building material
a specialty.

Office and Laboratories, 42 N. Sixteenth St. PHILADELPHIA, PA.

STUCCO

Lycoming Calcining Company

G A R B U T T
Monroe County, N. Y.

Enlarged, Re-equipped, Better and Larger
than ever. Capacity, 250 tons per day.

First Stucco mill built at Garbutt.

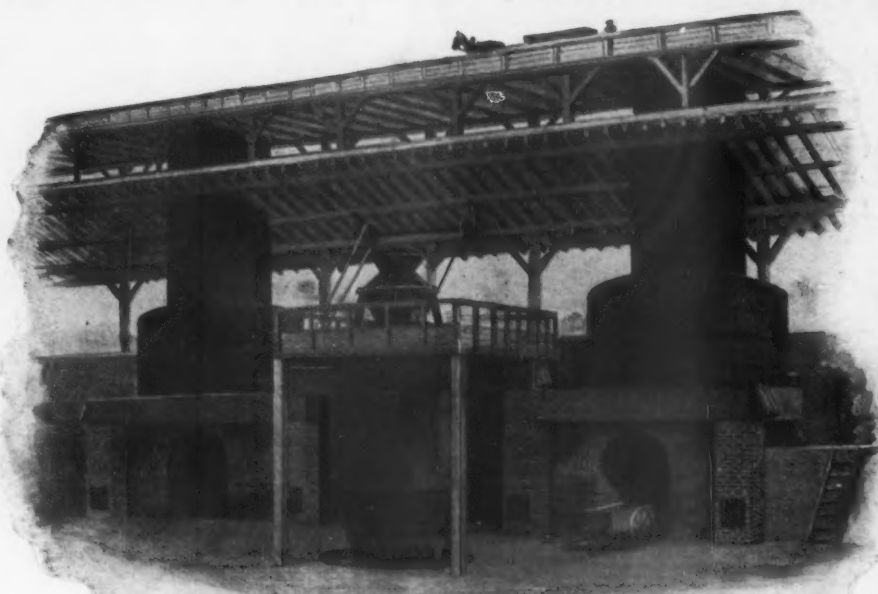
Now located on two R. R. sys-
tems. Shipping facilities
unsurpassed.

*Ten wall plaster Companies now using our stucco
exclusively, under contract. Write for price.*

Main Office, Williamsport, Penna.

Gas Producer Plant of the New England Lime Co., Canaan, Connecticut.

PRODUCER GAS
Makes the Best Lime
It increases the
Capacity of a Plant
and Reduces the
Fuel Bill



The Total Cost of
This Installation
Will be Paid for by
the Saving Effected
During the First
Year of Operation

"We have equipped two plants for above company and are now equipping a third."

MORGAN CONSTRUCTION CO., Gas Producer Dept., Worcester, Mass.

Tell 'em you saw it in ROCK PRODUCTS.

CEMENT-KILNS

Lined with Our **BAUXITE** Lining Blocks

In hot zone and our special fire-clay blocks throughout the rest of Kiln can be run from three to four times as long as Kilns lined with the very best fire-clay linings. Write for booklet describing Bauxite Linings for Portland Cement Rotary Kilns.

Fire-Brick for Lime Kilns

We number among our customers many of the large Lime and Gypsum Manufacturers of the Country.

Sewer Pipe, Wall Coping, Hollow Tile
Fire Proofing, Flue Lining.

Laclede-Christy Clay Products Co.

ST. LOUIS, MO.

"IF IT IS

LIME

WE MAKE IT."

Lump - Barreled - Hydrated Ground.

STRONGEST IN OHIO.

We are not connected with any Trust or Combination.

WRITE US

PHONE US

The Scioto Lime and Stone Company, Delaware, Ohio

THE WOODVILLE WHITE LIME COMPANY
TOLEDO, OHIO

Largest Capacity of Hydrated Lime in the U. S.

Sales Agents **EDISON PORTLAND CEMENT**

Manufacturers of and Wholesale Dealers in

Lime, Lumber, Sewer Pipe and a Full Line of
Builders Supplies.

OUR HIGH GRADE
PRODUCTS

White Enamel Finish

Edison Portland
Cement

Agricultural Lime

Polar Bear Lime

Lump O. K. Lime

Polar Bear Hard Wall
Plaster

Tell 'em you saw it in ROCK PRODUCTS.

The Hoosac Valley Lime & Marble Co.

=====ADAMS, MASS.=====

Manufacturers of

....High-Grade Finishing Lime....

Noted For Its Quick and Even Slacking.

Now in Use in Some of the Largest Buildings Being Erected in New York City.

THOS. D. CONNORS, President.

Telephone
Connection

New York Office: 1123 Broadway.



Red, Brown,
Buff and Black

MORTAR
COLORS



The Strongest and Most Economical in the Market.

Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO., CHATTANOOGA, TENNESSEE.

"Cleveland" Expanded Metal Lath

Rigid
reversible
reasonable

Easy to apply
economical to plaster over—
very sheet perfect

Self-furring
surpassingly fine for
stucco exterior work

MORTAR COLORS

Highest standard of excellence in Black, Red, Buff, Brown and Purple.

Roofing of All Kinds Manufactured by:

The Garry Iron & Steel Company

Eastern Office: 1123 Broadway, New York City. CLEVELAND, OHIO

DOES NOT DETERIORATE WITH AGE.



WILL NOT SLACK. ALWAYS READY FOR USE.

Excelsior Hydrated Lime

A PRODUCT OF MERIT.

The best prepared Lime in the market. Is superior to hot Lime for all purposes. Will not deteriorate. Absolutely pure and free from foreign ingredients. Successfully used for years by the largest users of Hydrate in the country.

SEND FOR PRICES.

MADE ONLY BY

The Cleveland Builders Supply Co. Cleveland, O.

Try us on your Portland Cement requirements

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.
MANUFACTURERS OF THE

Celebrated "Cheshire" Finishing Lime.

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.

ROCKLAND-ROCKPORT LIME

The sand capacity is immense. Produces a rich mortar with great spreading qualities. A saving of labor and material. Sold by all the best building material dealers.

ROCKLAND-ROCKPORT LIME CO.
FULLER BLDG., NEW YORK.

CHARLES W. GOETZ LIME & CEMENT CO.

MANUFACTURERS OF AND DEALERS IN

Glenwood Lime, Banner
Brand Louisville Cement,
Portland Cements and
Building Materials.

St. Louis, Mo.

Tell 'em you saw it in ROCK PRODUCTS.

The **Strongest White Lime**

ON THE MARKET

Uniform QualityFinest Grain

The American Clay Machinery Co.
WILLOUGHBY, OHIO

May 16, 1906,

The Mitchell Lime Co.,
Mitchell, Ind.

Dear Sirs:-

Replying further to your favor of the 8th inst requesting us to advise you the result of practical test of your lime in the manufacture of sand-lime brick. We are pleased to advise you that the lime hydrated easily and the brick made from it were first-class in every respect.

We have forwarded some samples of it to Mr. Elkus of the Indianapolis Composite Brick Co. and he can probably advise you further.

Very truly yours,

The American Clay Machinery Co.
by W. J. Burke.

MITCHELL LIME COMPANY
MITCHELL, INDIANA

THE OHIO AND WESTERN LIME CO.

HUNTINGTON, INDIANA

MANUFACTURERS OF

LUMP LIME

ALSO, DIAMOND BRAND SUPERIOR WHITE FINISH

A HYDRATED LIME

AND A GROUND AND FERTILIZER LIME

Capacity 4,000 barrels or 10,000 bushels per day. Capacity of Hydrated Lime, 120 tons per day. Our LUMP LIME as well as our HYDRATED LIME is the very best obtainable for all purposes for which a good lime is needed in erecting buildings. Our HYDRATED LIME is absolutely the best finishing lime on the market.

FOWLER & PAY,

Brown Hydraulic Lime, Austin Hydraulic
Cement, Jasper Wall Plaster, Brick, Stone.

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa.
WAREHOUSE: Minnesota Transfer.

MANKATO, MINN.



ASH GROVE
WHITE LIME ASSOCIATION
MANUFACTURERS OF
**High Grade
White Lime.**
KANSAS CITY, MISSOURI.

A. & C. Stone & Lime Co.

MANUFACTURERS OF

CRUSHED STONE AND WHITE LIME

TOTAL CAPACITY CRUSHED STONE 4000 TONS DAILY.

Plants: GREENCASTLE, IND.
RIDGEVILLE, IND.
PORTLAND, IND.

LIME KILNS AT
PORTLAND, IND.

General Office: 17 N. Penn. Street
INDIANAPOLIS

The Kelley Island Lime and Transport Co.

CLEVELAND, OHIO.

Tiger Brand White Rock Finish the best known and
smoothest working Hydrated Lime manufactured.

WRITE FOR PRICES

THE LARGEST LIME MANUFACTURERS IN THE WORLD.

Tell 'em you saw it in ROCK PRODUCTS.

MACHINERY

— FOR —
Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock-crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material.

Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalogue No. 28.

H. W. Caldwell & Son Co.

17th St and Western Ave., Chicago

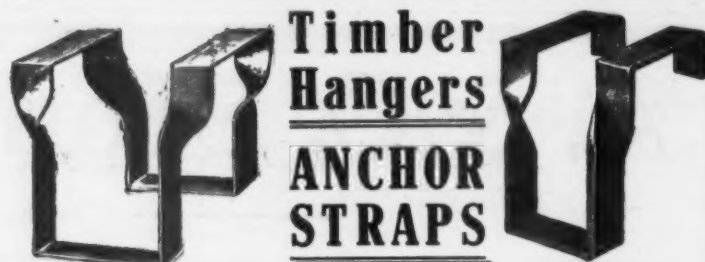
95 Liberty St., New York City
Woodward, Wight & Co., Ltd., New Orleans, La.

**Do You Have Cars to Haul ?
The Davenport Locomotive
Will Save Money**



**Special Designs for Special Purposes
Any Size, Any Gauge, Any Weight
Write for Prices and Particulars**

DAVENPORT LOCOMOTIVE WORKS
DAVENPORT, IOWA

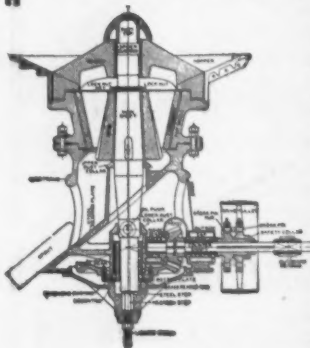


**For Wood, Steel or Concrete Construction. Special Hangers
to suit any conditions:**

CHAS. MULVEY MFG. CO.

17 to 21 South Jefferson Street, :: CHICAGO, ILL.

**THE AUSTIN GYRATORY CRUSHER IS THE ONLY ONE
HAVING AN AUTOMATIC OILING SYSTEM.**



The strain on the bearings of a gyratory crusher is so great that if dust reaches them or if imperfectly lubricated they are certain to be quickly destroyed and the machine laid up for repairs. The bearings of the "Austin" are enclosed in a double chamber—absolutely dust proof—and are lubricated by a constant circulation of live oil forced through the main eccentric bearing—which is the life of the machine—by an automatic pump operated directly by the gyratory movement of the main shaft. The lubrication must be perfect because the flow of oil is constant and positive.

In all other gyratory crushers there is only the discharge diaphragm to separate the dust from the bearings and gears, and a side door opens directly into the chamber containing the bearings. Dust gets into this receptacle readily and destroys the gears.

Immediately below the crushing head, in the "Austin" is placed the discharge diaphragm with dust collar the same as in any other gyratory crusher. Below this partition is a second diaphragm also provided with dust collar around the shaft and a dust cap covering the pinion, contained in no other crusher, enclosing the bearings in a double dust proof chamber and making it simply impossible for dust to reach the bearings.

At the bottom of the frame in the "Austin" is an oil cellar which is filled with oil to the level of the center of teeth in the main gear.

An automatic pump draws pure oil from this cellar, forces it through the eccentric and counter shaft bearings and any oil thrown from the teeth of the driving gear is caught by the cap and carried back to the cellar.

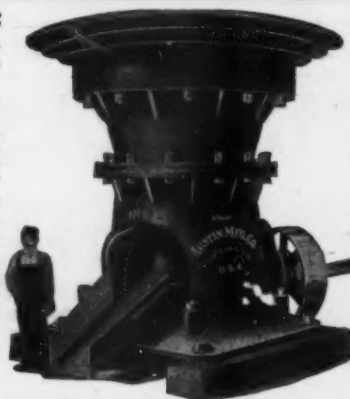
At the bottom of the cellar is a drain by means of which the impure oil can be removed insuring absolutely perfect lubrication, because every part of the bearings operates continuously in a bath of pure oil.

One never has to expose the bearings of the "Austin" to dust when in operation. Fill the oil cellar to the required height and the machine must oil itself since no oil can escape from the oil cellar and therefore maintains a constant level.

Sizes for all requirements.
We are the world's largest builders of rock and earth handling machinery.

Catalogues of all departments on request.

Austin Manufacturing Co. Chicago, U. S. A.
New York Office, Park Row Building



Tell 'em you saw it in ROCK PRODUCTS.



It isn't the ounces to the square foot, but the good work to the square foot, that makes a belt worth while.
The Rhoads Belt gives the good work, and honest ounces, too.
Try our high-grade short-lap for Cement Mills.

J. E. RHOADS & SONS



Philadelphia: 12 N. Third St.
New York: 40 Fulton St.
Boston: 105-111 Summer St.
Hamblet & Hayes Co., Eastern Agents.
Factory: Wilmington, Del.

QUALITY

STRENGTH

RELIABILITY

QUALITY

STRENGTH

RELIABILITY

QUALITY

RELIABILITY

Does Quality Appeal to You?
Does Prompt Service Appeal to You?
Does Reliability Appeal to You?

Then Buy

Your Stucco and Wall Plasters of

The

American Gypsum Co.,

Manufacturers of

High Grade Stucco. "Anchor" Cement Plaster.
"Anchor" Wood Fibre Plaster.
Superfine Calced Plaster.

General Offices, Garfield Building, CLEVELAND, OHIO.
Mills, Port Clinton, Ohio

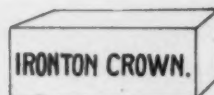
Tell 'em you saw it in ROCK PRODUCTS.

ROTARY CEMENT LINERS.



LIME KILN LININGS.

GROUND CLAY
FOR
WALL PLASTER
AND
BOILER SETTINGS



DIRECT HEAT

DRYERS

—FOR—

BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

American Process Company

62-64 William Street,

NEW YORK CITY

RUGGLES - COLES

DRYERS

RUGGLES-COLES ENGINEERING CO.

NEW YORK

CHICAGO

Cummer Dryers

See Other Ad.

Page 66

THE F. D. CUMMER & SON CO.,

Cleveland, Ohio.

BRICK and MORTAR COLORING

After twenty years "CLINTON" colors still stand at the head. Get the genuine, with the "Little Yellow Side-Label."

CORRESPONDENCE SOLICITED.

CLINTON METALLIC PAINT CO., CLINTON, N. Y.

MILWAUKEE BAG CO.

MILWAUKEE, WIS.

HIGH GRADE PRINTERS
& MANUFACTURERS OF



DUCK,
OSNABURG
AND JUTE
CEMENT BAGS.

DEALERS IN
PAPER BAGS & TWINES.
WRITE FOR PRICES & SAMPLES.

J. K. WILLIAMS & CO.

EASTON, PA.

The Largest Manufacturers in the U. S.

BRICK AND MORTAR COLORING

OF ALL SHADES

CORRESPONDENCE SOLICITED. SAMPLES AND ESTIMATES
CHEERFULLY FURNISHED ON APPLICATION.

CORE DRILLING FOR QUARRY AND MINERAL PROPERTY

I am prepared to make complete investigations
and reports. Write for prices.

A. T. THROOP, Consulting Engineer,
NIAGARA FALLS, N. Y.

S. W. SHOOP & CO.

ALTOONA, & PENNSYLVANIA

Designers and Builders of the
SHOOP IMPROVED PATENT LIME KILNS.
Designing and Installing a Specialty.

For Sale

This space to a progressive
manufacturer—one who de-
sires results.

Write for Attractive Rate

o.,
Y.
o.
NS.

PAGES
MISSION
ARE
A

ING
RE NOT
AVAILABLE

W
pro
prol
time
tha
tory
In
ber
cer
use
cen
pre
the
sun
qua
con
mo
str
bro
sar
doz
mu
ne
hu
act
ser

up
sic
ra
an
so
de
en
cu
en
er
m
th

sa
in
m
th
se
at
lo
of
p
sh
th
o
b
e
c
to
I
a
C
v
i
t
J
s

v
t
p
o
v
s
s
o

The Answer Is, More.

With all the increased facilities for handling and producing sand the cry is still for more. It is very probable that the consumption of sand at the present time amounts to more cubic yards in a single month than was consumed in a year no further back in history than 1900, speaking of the country as a whole. In the larger cities the percentage of gain has not been quite so great as this statement indicates, but certainly in the last two years the amount of sand used in the greater cities has increased by 100 per cent, and that same ratio is well maintained up to the present time with no indication of a slackening of the pace. The time may come when we can count the increase of a city's population by the sand consumption, just as the ancient Syrians did by the quantity of salt used. The greatest gain of sand consumption is to be found in the small towns, where most of the buildings of the past consisted of wooden structures. These new consumers of sand have been brought into being by the concrete industry using sand for sidewalks and houses, streets, sewers and a dozen new uses that were unheard of in such communities only a few years ago. The number of these new small markets for sand can be counted by the hundreds in every State, and the aggregate volume actually amounts to more than the big figures represented by the larger cities.

Sand as an industry is really only an infant, for up to a very short time ago it was considered to be a side line of the coal dealer or the supply dealer rather than an important operation requiring capital and expert attention. It now appears, since we know something about it, that the requirements of newly-developed quality and separation call for the highest engineering skill and very expensive equipment to secure satisfactory material. Sand deposits close enough to good markets to insure economical delivery are now more valuable than any of the gold mines of the Eldorado that the forty-niners risked their lives to reach.

Notes Remarkable Growth.

LEAVENWORTH, KAN., Oct. 3.—“The sale of sand,” said Mr. Dresser, of the Dresser Sand Company, “is increasing at a remarkable ratio, and there is nothing more fairly entitled to be regarded as staple.” In their business as dredgers of Missouri River channel sand, Mr. Dresser went on to inform me they had at present a serious handicap, as they had recently lost their towboat by fire, but were building a new one. Speaking of the further hindrances they experienced, he said the deposit of sand was constantly shifting, which forced them to often change the location of their operations. As to the origin or source of the sand, he gave it as his opinion it was mainly brought to the Missouri by the Platte. He had in early life been a California prospector, and so had crossed the Platte and wrestled with its sand with ox-teams. Taking up with more of his personal history, I found he was a Grand Army veteran, and by birth a Maine man, his boyhood home having been at Old Orchard. For forty-three years he has been identified with the sand business at Leavenworth, and now feels inclined to place the burden of looking after the details on his son, who is associated with him. Dresser, Jr., I found was also patriotic, having served a year and a half in the war with Spain.

Very Prosperous Season.

The Concrete, Stone and Sand Company, of Youngstown, Ohio, have done the largest sand business in their history this present season. Their new plant is equipped with a Marion steam shovel to reclaim the sand in the pit and a stiff-legged derrick with clamshell bucket for loading cars, and otherwise fitted up in the most modern manner, bringing the capacity up to fifty cars of washed and screened sand and gravel per day. The plant has been run to capacity since the start, early in the spring. Still there is no let-up in the demand, and the outfit is being operated overtime to some extent, for General Manager Pauly never allows his customers to suffer disappointment. The rapid development of the concrete industry in Youngstown and vicinity has made an outlet for all the products of this company, for they wash and grade into sizes all the gravel that is separated from their fine bank sand. The company's sand property is very valuable, as it comprises practically the total available supply at this important sand market.

The Big Four Railroad has secured sixteen acres of gravel bank land at Pendleton, near Anderson, Ind., which they expect to work for ballast and concrete purposes. The sand and gravel deposit is said to be from fifteen to thirty feet below the surface. Equipment for working the gravel will be installed this winter.

For the Retailer

The National Builders' Supply Association

Meets Semi-Annually.

OFFICERS:

GORDON WILLIS	President
St. Louis, Mo.	
CHAS. WARNER	Vice President
Wilmington, Del.	
G. O. PERKINS	Vice President
Des Moines, Iowa	
H. H. HALLIDAY	Vice President
Cairo, Ill.	
E. A. BRADSHAW	Vice President
Indianapolis, Ind.	
OWEN TYLER	Vice President
Louisville, Ky.	
JOHN J. KFLLEY	Vice President
Baltimore, Md.	
JAMES A. DAVIS	Vice President
Boston, Mass.	
E. E. EVANS	Vice President
Bay City, Mich.	
JOHN WHARRY	Vice President
St. Paul, Minn.	
P. J. DAUERNHEIM	Vice President
St. Louis, Mo.	
C. W. ENNIS	Vice President
Morristown, N. J.	
J. J. MANDERY	Vice President
Rochester, N. Y.	
G. H. GENGNADEL	Vice President
Dayton, Ohio	
LUTHER KELLER	Vice President
Scranton, Pa.	
B. L. GROVE	Vice President
Washington, D. C.	
R. W. MARSHALL	Vice President
Wheeling, W. Va.	
PETER FISHER, Jr.	Vice President
Kenosha, Wis.	
C. J. WATERHOUSE	Vice President
San Francisco, Cal.	
V. H. KRFOHABER	Vice President
Atlanta, Ga.	
J. R. McCORMACK	Vice President
Greensboro, N. C.	
C. M. KELLY	Vice President
Providence, R. I.	
J. C. LOVEFACE	Vice President
Memphis, Tenn.	
A. C. GOWER	Vice President
Greenville, S. C.	
HARRY W. CLASSEN	Treasurer
Baltimore, Md.	
HARRY S. WEST	Secretary
Toledo, Ohio	

Official Organ, ROCK PRODUCTS.

The Next National Convention.

Harry S. West, secretary of the National Builders' Supply Association, was in Chicago October 21 and 22, for the purpose of making arrangements for the accommodation of the next annual convention, which will be held in Chicago. Frank Wright, of the well-known supply firm of Meacham & Wright, is the local member of the executive committee, and he and Mr. West have canvassed the matter thoroughly. It has been decided to accept the proposition of the Auditorium Hotel for the accommodation of the convention, which will be held February 4 and 5, 1908.

At the last meeting of the executive committee, held in Pittsburgh, it was decided to have the convention this year as a two days' session, instead of three days as heretofore. This will mean that the members will be obliged to get down to work promptly on the program and attend strictly to business throughout all the sessions.

The entertainment features have not been fully decided, but it is probable that there will be a banquet after the work of the association is over, concentrating all of the entertainment features into one grand affair. Incidentally Mr. West reports that the National Association has been steadily receiving new members and that its business is in better condition than it has ever been.

Natural Building Material Exposition.

One of the most important exhibitions planned for the near future is the National Lumber and Building Material Exposition, which will be held at the Chicago Casino, Peek Court and Wabash Avenue, the week of February 10 to 17, 1908. Everitt W. Hogle, secretary of the Illinois Masons' Supply Association, is the director and general manager, and is pushing the arrangements with his accustomed energy. The Casino has 10,000 square feet of exhibition space, and one-third of this has already been contracted for. The United States Gypsum Company will put in quite an exhibit, including perhaps a miniature plaster mill in operation. A prominent sash and door house has agreed to build a special booth for a novel and interesting display, and manufacturers of cement block machines, etc., will be fully represented.

The roomy gallery of the Casino will be used during this exposition for convention purposes, a spacious hall, 33x80 feet, being provided to accommodate the conventions of the Illinois Lumber Dealers' Association and the Illinois Masons' Supply Association, both of which organizations have fixed the dates of their sessions so as to be coincident with the exposition. An effort will be made also, to get the National Builders' Association, who are to hold their convention in Chicago the first week in February, to change their dates to correspond. The meetings alone will insure a large and representative attendance, as the brightest and brainiest men in the building trades will be present to answer questions and to enliven the discussions of vital business questions.

Larger Sizes Growing Popular.

While in St. Louis recently, a ROCK PRODUCTS representative in talking with J. T. Wallace, vice-president of the Blackmer & Post Pipe Company, whose business offices are in the Wainwright Building, learned that the company are manufacturers of salt-glazed vitrified sewer pipe, both standard and double strength, drain tile, wall coping, conduit tile, fireclay flue lining, chimney pipe and tops. The extensive works of the company are situated in the famous Chilternham District in the western section of St. Louis. The company was organized in 1878 and incorporated in 1892.

Mr. Wallace said that a conspicuous example of the development of the pipe trade in recent years is shown in the fact that since 1890—at which time the largest vitrified pipe made in commercial quantities was 24 inches in diameter—they have made and sold over 250,000 feet of 27, 28, 30, 33 and 36-inch vitrified pipe, both standard and double strength.

Heavy Sand Operators in the Mississippi.

ST. LOUIS, Oct. 15.—A ROCK PRODUCTS representative called at the offices of the sand department of the Union Sand and Material Company, where he found C. G. Besch, manager of the sand and gravel sales. That gentleman must thank his stars for the invention of the telephone, a bank of these instruments being installed at his desk in the office of the company in the Liggett Building, though he is obliged to stand when using them. Between the numerous calls I learned the company rely upon the Mississippi and Meramec Rivers for their supply of sand and on the Meramec River channel for their gravel, from which the sand is washed and screened. In fact, at all their plants the washing and screening process is employed, in consequence of which engineers testify that the sand and gravel furnished by the company has no superior in any section. The company has a plant at Hannibal, two on the Meramec River and one at Memphis, where dredges are operated and the services of four towboats are required. Some idea of the sand and gravel business of the company may be gained from the fact that in the past ten months 36,000 cars have been handled. The Drake, Mo., plant has a capacity of from 1,200 to 1,500 yards and the Hannibal 1,800 yards in ten hours.

The Mankato Lime, Stone and Fuel Company, Mankato, Minn., have been established since 1895 and employ in their various departments some thirty-five men. They deal in brown hydraulic lime and stone, white lime, stucco, hair, brick, fire brick and clay, sewer pipe, drain tile, fuel, etc. The office and quarries are located at 930 North Broad and Lafayette Streets, where they have commodious and up-to-date quarters. Local trade is supplied and extensive shipments are made to all surrounding points. The business is managed by the president, Mr. A. Bashaw.

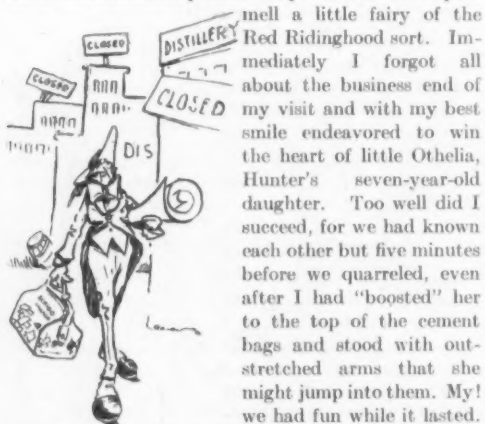
The Realm of the Retailer.



Scribo Crosses the Ohio River and Visits the Busy Building Supply Dealers of a Number of Hustling Kentucky Towns. Men and Methods as Seen Everywhere by Rock Products Correspondents.



My arrival in the good old State of Kentucky I shall never forget. I picked out the town of Dayton, where M. R. Hunter, Jr., holds the reins in the building material line, as my first stop. I saw Hunter, and he introduced me to his wife, who had dropped in "to help out" during her morning walk. I was chatting with them in a most pleasant way when in rushed pell-



Scribo's Arrival in Kentucky.

mell a little fairy of the Red Ridinghood sort. Immediately I forgot all about the business end of my visit and with my best smile endeavored to win the heart of little Othelia, Hunter's seven-year-old daughter. Too well did I succeed, for we had known each other but five minutes before we quarreled, even after I had "boosted" her to the top of the cement bags and stood with outstretched arms that she might jump into them. My! we had fun while it lasted. Maybe it was my fault—usually it is a man's fault, at any rate. I turned to her happy father and asked him if he had much trouble with paper bags. His answer was long and emphatic, but the substance was "Yes." Perhaps it was the length of time he consumed that allowed little Othelia's love to cool, but I think I can with safety blame his wife also, as she gave me a dissertation on crockery with illustrations that was an education in itself. She had purchased a quantity, it seems, on her own hook, and from an agent at that. It didn't take me long to learn that while she may curtail household expenses this winter to break even, it's a safe bet that "pin money" from now on will be invested along lines of the "feminine beautiful."

Hunter, while some may consider a dealer in a small town of no consequence, is a corner that will make not a few sit up and take notice, as he is a hustler "off the original block." His warehouse, including stables, where three teams are cared for, and which he keeps busy, is well supplied to meet emergencies, holding a good stock of cement, lime, sand, cinders and fire clay chimney tops. He handles Lehigh exclusive of all other Portland cements, and his trade in Louisville Natural is such that "it keeps him busy buying it," to use his own expression.

Springfield, Ohio, furnishes all the lime he uses, and the building boom that took a half nelson on Dayton this past spring and summer has caused him to forget all his lime troubles experienced in the past.

The "new owners," or rather those who started building earlier in the season, created the fever of

cement walks, with the result that the entire town was soon stricken, the epidemic even extending outside the farthest post of the most isolated ward. Hunter was there when it happened, but if he had any anti-septic he did not produce it, feeling possibly that the disease was of the kind that tends to the patients' good in the end, at the same time not thinking of himself further than to be there with the goods and "Bill on the job" when the occasion produced itself.

Thus did I see the reason why M. R. Hunter, Jr., was receiving the first consignment of a car of cement which three husky negroes were busy unloading from one of his big wagons as I walked out on the platform in front of his place.

Having learned that he supplied all the contractors in Bellevue, an adjoining town, that he was finishing a walk way on Tenas Avenue, where alone a hundred barrels of cement were used, and had bid under other competitors on not less than three jobs in private residences, cellar work and walks, I concluded I would be on my way; but happily I was intercepted by his charming little daughter, whom I found seated on the edge of the platform, her little legs swinging gracefully and her sweet little mouth keeping time as she munched a ginger cookie, which by forethought she had carefully placed in her little shopping bag before leaving home. It was here that "Scribo" felt the sting of homesickness, felt an uncontrollable desire to play "horsey" again, to sprawl in the grass, roll over and over, jump up and play "tag," make the dog bark and chase him, and then have what hair one has left carefully and deliberately jerked out by the best little creature in the world—one's own.

It may have been that this feeling changed my appearance toward her, for she instantly offered me a "bite," and as I walked away toward the car line her childish "good-by" rang through the air to me over the din and rush of traffic throughout the remaining afternoon.

Marion M. Allen.

The real busy bird who woke up in time to get a firm grip on the worm is to be found in one Marion M. Allen, who conducts an establishment in Newport, Ky., the complement of which, in my estimation, would carry top weight in any race for fifteen-year-olds in the building material line. In other words, Allen is there. He not only has the goods and does not hesitate to show them, but at the same time he has a peculiar desire to get "shed" of them in a hurry. To say that he succeeds in putting it on with salve and rubbing just enough not to



The Little Fairy at Hunter's.

hurt. This Allen is the real candy kid.

After a long—I say long—I mean it—walk over his plant I concluded that the shade cast by a young catalpa tree on the cement walk in front of his office was good enough for me. Don't you know, I had a hard time bringing Allen to my views on the matter. When he did acquiesce the expression on his face was about the same we all use when our best friend insists on our taking dinner with him and "wifey" in their "dear little flat." I did not really mean to inflict agony, but it seems to me now that I did. Every time a team came out or went in—which was often, I must say—Allen produced a movement of the muscular variety about like that you notice on the screen in a moving picture show.

Did some one say, "A busy man"? You can take it from me—and it goes double at any odds you name—I'm betting that Allen goes to sleep o' nights with a cargo of orders in his hands and wakes up the next morning with all of them filled. That may be going some, but I've sat on the rail in my time, gone hungry,

soaked my best suit, and all that, and I'm here to do it again. So come on.

Marion Allen has in his big yards everything wanted in building supplies except pressed brick, and he does not have to go far to get that material if he wants it. And he gets what he wants when he wants it.

Besides carrying four brands of Portland cement in stock, the Giant, Nazareth, Buckhorn and Limestone (obtained at Irontown, O.), he has a good line of Louisville Natural. All of this is stored on the ground floor of his largest warehouse, where also he stores his lime, obtained at Cedarville, Ohio, and his plaster material. In this he deals extensively, and he has large warerooms for the storage of calcined plaster, using the "A" Brand of the Grand Rapids Gypsum Company of Michigan together with the wall plaster made by the same firm. His mortar coloring comes from the Garry Iron and Steel Company of Cleveland, O. He finds a great demand for it.

Back of this warehouse is his bin for white sand, while above on the next and top floor is stored one of the most complete stocks of sewer pipe, joints, angles, triples and hoods imaginable, stacked to the apex formed by the gable of the roof. Many are damaged, and when asked why he carried these, Allen only smiled and remarked: "There is a lot of money in this kind of truck."

The white sand bin looked queer to me; so I asked him about it. "That is from Missouri," he said, and of course he smiled. "From Pacific, Mo.," he added, "and is only good for floor work and wainscoting." He receives this in its raw form, being compelled to screen it after it reaches Newport.

In his yards, which cover an area of about three acres, dotted here and there with warehouses and stables, is stacked his "ready for delivery" sewer pipe of all varieties. Back of this you find carload after carload of lathes, hemlock, poplar, yellow pine, spruce and white pine. Near this is a large bank of loam which they use for the mortar in press brick work.

Several years ago Allen bought an interest in a concrete block plant in Ohio, but owing to mismanagement, according to him, it was not a success, and when the failure came he was left holding the bag. This did not discourage him, however, as he immediately set to work and erected a home for himself and family out of the blocks in stock and then had the remaining blocks shipped to his yards. While he lost in the neighborhood of \$11,000 in the deal he thinks that the results obtained in his residence fully compensate him.

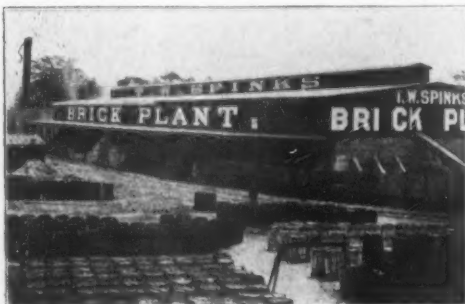
Allen also has a large coal yard and devotes considerable time looking after this end of his business.

Frank G. Ader, Newport, Ky.

Along about the corner, if you can find it, is located the big plant now doing business under the name of The Frank G. Ader Construction Company in Newport, Ky. The corner, or what should be a corner, is known as Sixth Street and Saratoga Avenue, but inasmuch as the Ader people have acquired nearly all of the available property in the immediate neighborhood, including the street crossings, the only way you can tell "where you are at" is by a large sign almost as large as the one bearing the firm's name and which you can't help seeing, located on the side of the one-story building used for the company's offices. The sign reads, in cold, hard black letters evidently intended to mean business right to the shoulder: "LABORERS WANTED." After you have entered the main door and looked around, you can see without glasses that they had a real reason for cornering the paint market in order to paint that sign.



At Marion M. Allen's Plant, Newport, Ky.



PLANT OF T. W. SPINKS, LATONIA, KY.

Mr. Ader was not in when I called, but I met his genial superintendent, Mr. P. J. Siedenbergh, who took me over the plant in order to convince me that when he said he was busy, he meant it. Four teams were busy in the yard as we passed through, it being then about eleven o'clock in the morning. They were hauling at that time sand and gravel, the cement for the work having been previously delivered. The brands of cement handled by the company are Whitehall, Tiger and Nazareth. Their plant here covers about three acres and is well stocked with building material of all kinds. About eight teams are kept busy generally.

In the Highlands of Newport they have under construction a reinforced concrete structure to be known, when completed, as the Bluegrass Inn, and which is being built at a cost of \$150,000. They are using Whitehall Portland cement on this job and are well satisfied as to the progress made.

Besides being an extensive dealer in building material as well as contracting for all the jobs he can find, Frank Ader has embarked into the industry of manufacturing concrete blocks, the title of the concern being the Peter Ader Concrete Building Block Company, which is also located in Newport. Mr. Ader has installed two Normand block machines obtained from Jackson, Mich., and the company is getting ready for a big demand along these lines. The success of their efforts so far has been most encouraging. They now have on their tables the plans for a Methodist church at Southgate, Ky., about two miles from Newport, part of which will be of concrete block construction. This is a \$6,000 job, and two teams have already been started on the work.

I am sending a photo of a double house recently finished by them in Norwood, Ohio, in which rock-faced concrete blocks manufactured by the Ader Company were used and in which a most desirable effect was obtained.

T. W. Spinks, Covington, Ky.



A Sign of the Times at Ader's.

At No. 1205 Madison Avenue, Covington, Ky., is located a large frame building which you approach after leaving the interurban car from N. port. A sign bearing the name of T. W. Spinks, dealer in lime, coal and cement, is painted in yellow paint on a black background, but does not tell the stranger in a strange land the full extent of Mr. Spinks' activities.

I entered the office of the establishment little dreaming that I was about to gaze on an industry far out of my reckoning, and certainly hardly to be expected in a burg made up of only sixty thousand souls. Again did the old instruction from my first "boss" in the newspaper game, "Be ready for the unexpected," come back to me, and before I had fully recovered I was seated comfortably beside the business-like desk used by Mr. Spinks, with a faint recollection only that I had passed through an opening in a strangely constructed railing, had introduced myself, possibly had shaken his hand, but above all was now in the midst of an office force resembling in size that of a national bank in our larger cities and not a whit less active. I then let my eyes fall on that railing which separates the outer office from the part occupied by the big desks, over which clerks were bending and stenographers were hammering away for dear life or taking dictation—all taking care of the rush of work handled by Spinks, and which I was afterwards to realize.

Did you ever see anything bordering on art in a sewer pipe? Well, here it is, right in Spinks' office. You can't help but see it. It's a railing and so constructed as to bring into play every pipe, joint, elbow and what not used in the good service of this material. This is Spinks' own idea, and the effect he has produced by his arrangement of the pipe not only is an advertisement, but results in a most graceful addition to the general appearance of his office.

Mr. Spinks took me in tow and from the start led a pace characteristic of him, I think, inasmuch as he was in a hurry. I had to call him down, and I did so. I was seeing things that looked good to me and which to him were every-day occurrences, and after I had halted him long enough to make him understand he resigned himself to the awful fate of answering questions. He didn't take long to warm up after he himself had stopped to once again take another good look at what he was really doing in the building material line.

While the plant located at this point is the largest

conducted by Spinks in building material, it is only one of three located throughout the City of Covington, the others being located at Seventeenth and Madison Avenue and at Twelfth and Washington Streets. The main yard consists of his principal warehouse, his stables, blacksmith shop, general offices, and a yard for sewer pipe, chimney flues, and pressed and fire brick. A switch from the main line of the C. & O. Railroad, with a capacity of eleven cars, enters this yard, while those at the others mentioned in their order have respectively a capacity of seven and eight.

The warehouse is so constructed that all of the cement and lime is stored on the second floor, together with other materials, such as plaster and mortar coloring, while the lower or ground floor is used for the housing of thirty wagons constructed by them and always kept in the best of condition by the force of experts employed in that special department. In a large ware room over the forge-room they manufacture wheels, tongues and sides of all kinds needed on the wagons used in delivering the material handled. The facilities are such that the least break can be remedied in the quickest possible time, no matter at what point the accident may have happened.

Directly across the street is a two-story pressed brick building recently erected by M. Spinks, the front of which is used for storerooms on the ground floor, the upper floors being arranged in modern flats, all of which are occupied. Immediately in the rear of this is located the luxurious apartment set aside as the home of the fifty-six head of horses. Every one of these knows Spinks personally, and they are taken care of in a way that would make the prize crew of the Chicago or New York fire department envious. Spinks' stable covers an area of about 200 by 100 feet, containing not only the stalls, with hardwood walls surmounted by wire screens and sawdust beds easily cleaned, and with troughs resembling the washstand in the lavatory of an up-to-date apartment house. These troughs work automatically, the water for the animals coming into the drinking-basin only after it has been emptied, and then so gradually as to prevent foundering, for after drinking a certain quantity of water the animal is compelled to wait at least ten minutes before the basin is again filled.

One of the two experienced stablemen employed by Mr. Spinks, each well versed in veterinary lore, is constantly in attendance, their duty being to look after the welfare of the stock only. In one apartment they have a laboratory, the appointments of which equal those of the best training-stables for thoroughbreds to be found in the bluegrass stables of this State. Every known medicine of any importance to the equine, except that used in the doping process, is to be found in this apothecary shop. Adjoining the laboratory is what is called the hospital, or rather the operating-room. Suspended from the ceiling and stretching from the walls are all the devices used by the professional veterinary in getting the animal in position necessary for the work in hand.

On another side of the stable is set aside a large stall for the sick beasts, and so complete is this arrangement that twelve hours usually suffices to put the most indisposed horse on his feet—that is, from a working viewpoint, as Spinks never works either man or beast when he sees and knows they are incapacitated. This stall has a basin-shaped floor, holding the necessary chemical the case may demand, and so arranged as to make cleansing an easy matter and contagion impossible. Hot and cold water is at all times available. A horse coming in at night showing any kind of distress, whether it be from a lost shoe or the picking up of a nail in the work of the day, is at once taken care of and relieved.

After seeing this I saw the innermost soul of T. W.



At T. W. Spinks' Office, Covington.

Spinks. I am safe in saying that a few years will not only find him at the top of his chosen business, but the world in general will know a man who is a man. I say this because a newspaper published in this town went so far as to say that T. W. Spinks was a self-made man. I take exceptions to this, as I am satisfied that the moment his good mother heard his first loud lung action, she discovered a real man in the crib.

Spinks practically controls the output of this town, having but one real competitor who may in time keep him sitting up nights. In my opinion he is devoting too much of his time to the manufacture of bricks, of which I will tell you later.

In his warehouse, which we visited together, I found that all were well supplied and exceptionally busy. Spinks is the agent for the Lehigh, North Hampton, Pennsylvania, Ironton and Buckhorn brands of Portland cement, his plaster material coming from the American Plaster Company of Lawrence, Kan. He is using both their Agatite and Satin Spar calcium, and I think he also has a mixture of his own, the knowledge of which I did not obtain. I noticed also a good stock of the "Green A" brand from Grand Rapids, Mich., together with the Hurelean and King Windsor brands, which bore earmarks, after the dust had been swept off, of having reached Kentucky from a point near Buffalo, N. Y. The Tiger brand of hydrated lime from the Kelley Island Lime and Transport Company of Cleveland, Ohio, is to be seen at all the Spinks yards, and Mr. Spinks told me he thought it was the best on the market and that he could not get enough for general use. His lime for immediate building use comes from Springfield, Ohio, while his sand is largely Ohio River bed products, as are his pebbles. He depends, however, on Miami, Ohio, for his best stuff, and I



ROCK-FACE CONCRETE BLOCK HOUSE.

Built by the Frank G. Ader Construction Company of Newport, Ky.

learned that the banks of the Miami River furnish him nearly all the wash river sand he uses, as well as the gravel, excepting the boulders which are crushed for concrete work by their own machinery. Near the sand bank and gravel yard—they do not handle white sand—are stored the lathes, both wood and metal.

Now I am going to tell you about going out to Latonia, Ky., with Mr. Spinks. This was a visit to his brick plant, and I must say that here he has the goods. He told me that he had over \$100,000 invested and I do not doubt his word, as I regard it as the most complete plant of its kind in the country. Its success will depend on the quality of clay used, but this, from close examination as it left the car lifted up the incline to the receiver, appeared to me as entirely too brittle.

I told Spinks about this, and he laughed at me, of course. I stood for it at that time, but when he had shown me the entire make-up of this establishment, that idea of "he who laughs last," etc., hit me squarely in the nose, for he handed me a brick afterwards, a common building brick thoroughly fired and as perfect as one could expect. This brick was taken from a stack that had but lately been cooked and was still warm.

In constructing this plant, Mr. Spinks did not overlook a single detail in his desire to make it a model of its kind, and he has incorporated every new device and system known to the brickmaker's craft, having studied the methods used by the largest brickmaking plants in the country. His product will be shipped to all points of the country, and his ability to supply the enormous demand can be readily seen from the fact that the output reaches a total of from 65,000 to 100,000 brick a day.

All the clay used is obtained direct from the bottoms adjacent to the plant, of which he owns an area of twenty-five acres.



At the Kenton Supply Company, Covington.

Kenton Supply Company, Covington, Ky.

There are two things certain about the Kenton Supply Company, located at Fifteenth Street and Russell Avenue, Covington, Ky. One is that it is an impossibility for the plant to burn out, and the other is that they have no fear of a drouth putting them out of business. I became convinced of the fact that it is not necessary for them to carry any great amount of fire insurance when I discovered that I was matchless with a well filled pipe in my hand and a desire to start it in the way it would do the most good. I appealed to J. H. Niemann, general superintendent, for assistance. After a faithful search through his clothes, in the ledger, the drawers—of the desks—and, as a last resort, asking the stenographer, Mr. Niemann was compelled to admit that the big plant conducted by them was an absolute failure as a custodian of matches. He could only apologize by saying that if one William A. Rabe, the man who carries all the weight and who is referred to by the many employees, when he is not around, as "the boss" were only there such an insignificant thing as a light, or, for that matter, an illumination of any kind from a Fourth of July Sunday school picnic to a bonfire at a political meeting, could easily be taken care of.

Mr. Niemann is without doubt a versatile man, but it took him some little time to remember that adjoining their offices, in fact, almost under the same roof, an emporium originally started with the idea of taking care of the thirsty, and still doing business in that line, would have a match, and maybe other things. But, lo! again we were doomed to disappointment. While the white-aproned man facing those whose wanderings landed them in his immaculate presence was well supplied with the necessities to start a good fire in the regions about the diaphragm, he could not to save his life have found an innocent little collar-button that had found a nice restful spot under a folding bed. He also was matchless, strange to say, but enlightened as to the fact that, no matter how dry Rabe, Niemann or the rest of the force got in the daily grind of breathing into their system all the dust they were not selling, they had shown great discretion in establishing themselves so near an emergency hospital of this kind.

Satisfying myself that I was right in my opening statement, and having carefully replaced my pipe in its case, I concluded I would take a good look around and then beat it to a more antiquated spot, where kerosene lamps and gas had not as yet been passed up as a light-producer by that unseen thing known around powerhouses as "juice."

The Kenton Supply Company's yards cover over three acres of ground, into which a switch from the C. & O. Railroad tracks enters. In their warehouse are stored their cement and plastering material, coloring and hydrated lime, while on the second floor are their better quality of flue-linings and chimney tops. To the left of this as you pass in they have erected an airtight room into which is placed the lime they receive from the Strunk-Meyer Lime Company of Cold Springs, Ohio. This they constructed to prevent air-slaking, and the results obtained, according to Mr. Niemann, are up to their fondest hopes.

They are agents for no brand of Portland cement, but have in stock a good supply of Old Dominion, Atlas, Alma, Alpha and Buckeye, together with Louisville Natural, Akron and Utica, using more of the last-named, as they claim it gives better results in pressed brick work, to which they devote considerable attention.

In their yards they have established, in addition to their stables, a blacksmith shop and forge-room with the latest improved appointments. Here all the repair and construction work on their wagons is promptly taken care of by a force of men employed in this department alone. So adequate are their facilities in this line, that hardly a single moment is lost in the eight hours of constant work of their teams. In the rear of the forge-room, on the other side of their switch, they have stacked laths in all the desired woods and in large quantities, while over to the right of this are to be seen the teams backed up, the wagons being hurriedly filled from the big banks of sand and gravel piled according to their grade. All this material is obtained locally, that is to say, from the bank of the Ohio River, and allowed to dry in the yard before being sent to the job.

J. H. Niemann soon showed me he was the man on the job, and while I was unfortunate in not meeting Mr. Rabe at this time, I take this opportunity to congratulate him on the class of men he employs.

Kansas City, Kan.

W. O. Weihe, whose office and yard are situated near the Louisville & Nashville station, besides dealing in lumber, handles Sandusky Medusa brand of Portland cement, Ste. Genevieve white lime in barrels and Acme cement plaster, for which he has a good sale, as rock plaster is not much used except for interior finish. Also Evens & Howard's sewer pipe, Chester, Ill., sand, and Masury's paints. Mr. Weihe

has been established fourteen years and each time I called was full of business. He can, when occasion requires, talk with his German customers in their own language.

St. Louis, Mo.

After bowling along the Gravois Road in the trolley car and thinking of the days when General Grant was engaged in hauling wood on this old turnpike, I alighted at L. H. Tiemann's warehouse. I had scarcely mentioned this historical fact when he remarked that Grant's old wagon was still in commission, and sure enough it shortly afterward meandered past, creaking and groaning in every joint. Mr. Tiemann explained this by saying the old man who owned and used it did all the repairing himself. There were two things here which attracted my attention. On the rafters and walls of the warehouse several hundred horseshoes of various sizes and makes were nailed, and if each shoe is a harbinger of good luck there would seem to be sufficient in store here to last a lifetime. Looking at the framed pictures of a number of noted racers, I remarked to Mr. Tiemann that there were indications that he was something of a horseman. He rejoined that next to his family he loved a horse. Presently one of his teams (of which he requires ten in his business) drove up, and truly they were horses to be proud of. I was hardly surprised when he told me they could get away with from 120 to 130 bushels of lime for a load, and it should be noted that there is a good deal of up and down hill country road in the section in which his trade lies. Mr. Tiemann said he long ago discovered that it costs as much to feed a poor horse as a good one. Furthermore he said he had the best men he could get and paid them well. A most satisfactory investment he found it, too, since they did not watch the clock and were devoted to him and his business. He need not, however, have told me this, as I had already seen some of his teams drive away at 5:45 p. m. instead of putting up.

I found that Mr. Tiemann handles Red Ring, Atlas and Lehigh cement, Goetz and Glencoe lime and plaster and Blackmer & Post's sewer pipe, flue lining, etc. His trade use lime putty in plaster. He sells lots of sand. As an object lesson concerning the recent development of building operations in Southwest St. Louis, he said his sales of cement had risen from five carloads a year, which was all his trade averaged for a long time, to fifty or sixty cars annually, and that within two years over one thousand houses had been built in his neighborhood.

Mr. Tiemann bought out a rundown business eleven years ago and now wouldn't sell out for ten times what he originally invested. His warehouse is situated on the Missouri Pacific system, and standing on the tracks were two cars of Bedford stone, which he is to haul to a new schoolhouse job in his vicinity.

Centralia, Ill.

I had no sooner presented C. A. Glore my card than he told me he had met Mr. Defebaugh at the convention. After a chat, in which the salesman for the Building Supply and Coal Company of East St. Louis joined, I proceeded to interrogate Mr. Glore and found the lumber and material business in which he was engaged had been established by his grandfather a quarter of a century ago and that he had acquired it ten years since. He handles Atlas and Lehigh Portland cement, which he sells mostly in paper, also some Louisville common, Marblehead and Ste. Genevieve white lime in barrels, American Cement Plaster Company's Agatite and Heath & Milligan's paints. While keeping Marblehead hydrated lime in stock, it has not as yet been introduced to any extent. Calling on him after lunch, Mr. Glore, finding I was a good walker, proposed we look around town, and as he knew I was interested in concrete block makers and their work he undertook to pilot me where I could see both. On our way we passed a new residence where the foundation work and porch were of concrete block construction, and farther along stopped to examine a new house that was nearly completed and of which the first story was constructed of concrete blocks and the second of frame. After a while we arrived at J. W. Clarke's concrete block plant, and, he being absent, we talked with his daughter, who evidently is much interested, since she discussed the process with the same ease that some young girls would describe bread-making. I learned that Mr. Clarke used Bedford cement and saw they had an Ideal machine.

We then proceeded to the cold storage plant, to which a large addition is being made. The new structure is of concrete blocks, and the space between the blocks or cores was being filled with ground cork in the proportion of six and one-half pounds to the cubic foot. The object of this was to absorb damp-

ness, to keep out the heat and retain the cold. The company had such a building constructed eight years ago in another city and found the apples and other fruit stored in it were preserved with remarkable success. The maker of the blocks is using Atlas cement furnished by C. A. Glore.

J. W. Tate was, I found, at Hot Springs, and I had a chat with K. D. Root. In Portland cement they handle Bedford and Lehigh; they also sell some Louisville common. Cement is sold in paper. For white lime they deal in Ste. Genevieve, which is handled in wood. The demand for plaster for interior work is supplied by Acme. They also have some business in United States Gypsum Company's products. For side lines they handle the Morton-Senou Manufacturing Company's paints, Black Diamond and Rubberoid roofing, and building paper from the Capital Paper Company.

In talking with F. S. Robertson I learned that Mr. Bostwick has the old Condit lumber stand and devotes a part of his time to traveling as a salesman for the mills during the shipping season. They handle building materials and sell Atlas cement principally; for white lime, Marblehead and Ste. Genevieve; Rockwall cement plaster from the United States Gypsum Company. As a side line they deal in the B. P. S. paints from the Patterson-Sargent Company. Speaking about Sackett plaster board, he said they were figuring on carrying it in stock. Regarding cement, I learned that some years ago the dealers here clubbed together in buying it to get carload rates, while now one hundred cars would be disposed of in town as quickly as the old-time order for one car. Faulty work some time since in cement sidewalks created a prejudice against it and carried the business to stone contractors. There are indications, however, of a change in these conditions, and this will still more largely develop the use of cement at Centralia.

East St. Louis, Ill.

The Casper Stolle Quarry and Constructing Company, whose East St. Louis office is at 43 Missouri Avenue, have quarries and crushers at Stolle, Ill., and one hardly needs to visit their quarry to get an idea of its size and the capacity of their plant. The Illinois Central Railroad, on whose line the plant is situated, have paid the company the compliment of naming the station there for the proprietors.

Granite City, Ill.

If a large and fine building occupying nearly a city block and furnishing stores for the ground floor and offices for the second story is an advertisement for the concrete block construction method of building, the Morris Building at Granite City, Ill., will serve this purpose for the Morris Lumber and Construction Company, which is also engaged in manufacturing concrete blocks. In the absence of the manager, R. A. Morris, I talked with V. S. Morris and learned that they use the Wingate machine from Columbus, Ohio. Their Pettyjohn mixer is run by electric power, and tamping is done by hand. For cement they use Chicago A.A. Ideal water-proofing is their preference. While this concern has been successful in this line, Mr. Morris stated that the poor work of inexperienced parties engaged in making blocks causes the insurance companies to make a higher rate than in case of brick buildings, when it should be less.

Booneville, Mo.

E. G. Thoma is building up a business in the manufacture of concrete blocks, though mainly confined at present to foundations, columns, sills and trimmings. He recently built a concrete oven for Hirlinger & Huber's bakery. The term "oven" does not properly describe the job, since it is part of a small one-story concrete building erected in the rear of the store, thus ridding it of the heat and fire risk. Mr. Hirlinger is pleased with the experiment in every way, particularly as they get more heat and use less fuel than in the brick oven, which the new one displaces. Mr. Thoma says he recently put in a large Ideal block machine from South Bend, Ind. He uses Carthage stone saw screenings in facing. For cement he prefers Atlas and Sunflower.

In an interview with E. H. Roberts I learned that his father, for whom he was named, had died recently, but the lumber business in which they were engaged is still carried on under the old style. Besides lumber the concern handles Universal cement and the United States Gypsum Company's Golden Seal plaster.

The Booneville Mercantile Company run two large stores and carry a full line of shelf hardware and builders' hardware; also farm implements, stoves, etc. Mr. Hudson has charge of the Morgan Street store, and there Dickey (Kansas City) sewer pipe is carried in stock.

Sand-Lime Brick

Annual Meeting.

The National Association of Manufacturers of Sand-Lime Products will hold its next convention at Columbus, O., December 4, 5 and 6, 1907. The headquarters of the association will be at the Chittenden Hotel and the meeting will be held in the German Room of that institution. There will also be a room reserved for exhibits. Manufacturers desiring exhibit space for their products will please send in their notification to the secretary in advance.

Secretary H. de Joannis of Chicago has made every arrangement for the accommodation of the convention, and in conjunction with President H. O. Doerr is arranging the program, which will be announced in full later on.

Interesting Tests.

The United States Brick Corporation, Michigan City, Ind., has had a very busy year. The company has supplied its sand-lime brick for a large mercantile building in Gary, Ind., at the corner of Broadway and Fifth Avenue. The plant has been operating daily all through the year and there are no signs of a let-up.

Geo. W. Bostwick, the general manager of this concern, had some bricks representing the average run of the plant tested to determine their actual structural value. The tests were conducted by Robert W. Hunt & Company, engineers, of Chicago, and resulted as follows:

Brick Tested.

- No. 1, standard grade, about six months old.
- No. 2, standard grade, three days old.
- No. 3, standard grade, about thirty days old.
- No. 4, standard grade, about four months old.
- No. 5, facing grade, about four months old.

Above brick were a fair average of the product.

Crushing Tests.

	Brick No. 1.	Brick No. 3.	Brick No. 5.
Dimensions	4x8.25x2.15	4x8.25x2.38	4x8.25x2.25
Area subject to pressure sq. in.	33.00	33.00	33.00
First sign of fracture under load of—pounds	47,780	104,810	45,390
Ultimate load sustained—pounds	106,670	113,720	196,350
Crushing strength per sq. in.—pounds	3,323	3,446	5,950

Transverse Tests.

- Distance between supports, 7 inches.
- Height of brick, 2 1/4 inches.
- Breadth of brick, 4 inches.
- Transverse strength (maximum load sustained), brick No. 2, 780 lbs.
- Transverse strength (maximum load sustained), brick No. 4, 1,070 lbs.

Sand-Lime Brick in California.

The plant of the Golden Gate Brick Company is at Antioch, Cal., on the south bank of the San Joaquin River, and about fifty miles from San Francisco. Antioch is at tidewater, so that the Golden Gate Brick Company has the advantage of water transportation. Its plant also has a spur track to the Santa Fe Railroad. On the San Joaquin River the company has its own wharf, where its products may be loaded upon schooners or barges for going down the river into San Francisco Bay or up river through the San Joaquin or Sacramento Rivers, as the case may require.

Going down the bay, San Francisco, Oakland, Berkeley, Alameda and all the other bay towns may be reached. Thus the company has exceptional facilities for getting its brick to market.

The company has been operating for the last five years, and hence was in good shape to meet the demand for brick arising out of the reconstruction of San Francisco. Mr. Pratt, the manager, who has charge of the company's office on Market Street, San Francisco, says that there has been a good demand for its brick and it is at present sold away ahead of the manufacture.

The company makes exclusively a sand-lime face brick and employs the German process. The product is a very delicate granite white and is quite popular as a face and ornamental brick. The sand from which the brick is made is taken from the bed of the San Joaquin River, opposite the company's plant. It is a sharp granite sand, and comes from the wash of the great Sierra Nevada Mountains. The sand is deposited in the beds from whence the com-

pany derives its supply, in quite a peculiar manner. In the San Joaquin Valley strong north winds are quite prevalent at certain seasons of the year, and as soon as it comes low water in the river the sand in the bed of the river dries out on the surface, and then is lifted up and carried by the north winds to the south banks, where it is caught and held in abeyance.

Besides a large reservoir deposit of sand, the winds convey about enough from year to year to furnish a supply for the brickmaking plant. The plant is under the superintendence of A. F. Lindgren, who helped erect the plant, and who has had charge of it ever since.

Many fronts are composed of white brick, with the porches, balconies and canopies painted in bright greens, and red, making very striking contrasts indeed. At the corner of Montgomery Avenue and Jackson Street, Chinatown, is a 3-story building faced with white brick with window sills and arches of red pressed-brick and the effect is very striking indeed and is considered handsome.

The new passenger depot of the Southern Pacific Railroad in Berkeley on the East Side of San Francisco Bay is being faced with these white brick and the building promises to be a very attractive one. It will doubtless be the advertising herald for similar important structures.—H. A. Crafts, in Brick.

The New Peerless Brick Press.

The twentieth century with its marvelous progress in the field of manufacture presents no more interesting study than the development of the art and science of making sand-lime brick. There was a time when the sand proposition was considered as one of the least important factors in the line of building materials on account of its supposed cheapness. Nearly every locality is supplied with sand, either from the bed of streams, from pockets in the bosom of the earth, from mountains, or from the product of the rock crusher.

With the great development of the sand-lime brick industry and a constantly increasing demand for this particular product, this essential ingredient has come to be looked upon in an entirely different light from that which obtained in the past, and today there is no such golden opportunity as that of entering the sand-lime industry in an intelligent and scientific way.

One of the latest machines on the market is the Perfection sand-lime brick press, manufactured by the Cleveland Brick Machinery Company, of Wickliffe, Ohio. To perfect this machine the principal points taken into consideration are strength, durability and simplicity of construction. The Perfection sand-lime brick press was designed and is built especially for the sand-lime brick industry.

Sand is the most refractory material that has ever been converted into brick and the hardest on machinery. The extreme pressure required to get a dense brick that can be easily handled in the green state makes the wear on the machine working sand a serious proposition, and the press therefore must have a very high factor of safety. Such a machine is being made by the Cleveland Brick Machinery Company, proportioned especially for making sand-lime brick. (See cut on page 65.)

The builders offer the following details for the consideration of its merits: The pressure given by the Perfection press is very much greater than that of other machines, thus producing a denser, heavier, less absorbent and much more perfect brick. Other features are the feed mechanism, feeding the material into the mold; the method of indexing the mold table by a perfect, silent and positive movement; the feature of the machine is all self-contained on a single bed plate; the general simplicity of the entire construction dispensing with steam heating of the molds is especially essential, preventing the destruction of the temper of the mold liners and die plates; therefore insuring long life and retaining perfect form of the mold. It is simple and powerful, convenient and accessible. It is built of the best material throughout; the workmanship and fittings are good, honest and accurate and guaranteed. No pains have been spared to make this particular press as perfect as possible for its work.

The iron hopper containing the feed mechanism placed over a portion of the table is a circular pan-shaped device 4 feet in diameter and 14 inches deep, having a capacity of about 3/4 yard of material. The cut-off is directly between the table and the hopper, allowing operator to cut out the feed to the mold in an instant when the press is not in use. The feeder is a mechanical device consisting of six obtuse angle-shaped arms arranged to alternately stir and press the material into the molds, rotating continuously when the press is in operation, agitating the material and filling the mold, which is brought in position under the hopper with each successive movement of the index mechanism.

Plaster.

Growing Demand in the South.

KNOXVILLE, TENN., Oct. 16.—The Tennessee Wood Fiber Company has been in operation three years and the officers of the company are: George P. Gaut, president and general manager; W. L. Murphy, vice-president, and Charles B. Gowan, secretary and treasurer. Mr. Andes, the superintendent, is a mechanical engineer and has introduced several labor-saving machines and made many improvements in the manufacture of the wood-fiber plaster. The plant is located on the line of the Southern Railway.

They buy their gypsum rock and haul it from Alabaster, Mich. The clay they secure from property near Chattanooga, Tenn., and they have found this the best suited for their purpose. They use Etawah hydraulic cement and poplar wood fiber, which is obtained in this vicinity.



PLANT OF THE LYCOMING CALCINING COMPANY, AT GARBUTT, N. Y.

One particular feature is their system of drying the clay, which is a very economical process. They have a room 36 by 36. The floor consists of a bed of concrete on which briars are laid and other brick bridged, on top of which is another layer of concrete, thus forming a hollow space. Through this they have run the steam pipes which carry exhaust steam from the engine. The clay is spread over the floor in about a four-inch layer, and it takes a little over twenty-four hours to dry. Mr. Andes said that by this method they secured much better results, the clay being made more plastic. The clay is ground in a crusher and burr grinder. The latter also contains improvements designed by Mr. Andes.

The wood-fiber machine also serves by adjustment as a hair-picker. The saws are removed and a cylinder put on. Teeth on the picker revolve, drawing the hair around the cylinder several times before it reaches the other end. A suction of air keeps the inside perfectly clear. They have a Broughton mixer, which gives excellent service. Until a few months ago they manufactured the wood-fiber only; then they added hair for an experiment, and their customers are greatly pleased with the results obtained.

The trade in the South have readily taken to the neat goods, and several of the large buildings in Knoxville have been plastered with the Tennessee brand. They have recently had a heavy demand from coal companies opening mines and building houses in various sections in the vicinity. Their capacity is fifteen to twenty tons per day, and all year they have been pushed to their limit.

Flourishing Mixing Plant.

KNOXVILLE, TENN., Oct. 15.—The Knox Fibred Plaster Mills, located at this place, have their mill a few miles from town on the Southern Railway. They manufacture the "Knox" brand of wood-fiber wall plaster. R. E. McNew is secretary and treasurer of the company and showed a representative of Rock Products through the mill. They have a capacity



PLANT OF THE WHEELING WALL PLASTER COMPANY, WHEELING, W. VA.

of about twenty tons per day. The gypsum or stucco they bring from Alabaster, Mich. It comes in car-load lots and is stored in large bins on the platform near the sidetrack. The clay comes from the southern part of the State, and the logs are secured in the vicinity of Knoxville. Poplar is used mostly. The clay and rock are ground in a crusher. The clay is put through a rotary kiln and thoroughly dried, then elevated by a conveyor to the second floor, where it is put through a vertical mill and ground to about sixty mesh. From this mill it is carried by another conveyor to the third floor, and there mixed with the other materials. The wood-fiber machines is on the first floor, and the logs, brought in cut to the proper length, are cut here. Hydraulic cement is also used in the mixture. The Broughton mixer is used, and for this the material is bagged. A 60-horsepower engine operates the machinery of the plant. Mr. McNew said that business had been very good this year, though they were bothered some by the shortage of cars. The demand for hard wall plaster is increasing rapidly in this section.

Increased Capacity at Pioneer Plant.

The first stucco mill established at Garbutt, N. Y., in 1820, is still in daily operation, turning out gypsum products for the use of the third generation of its original customers. The old mill quickly gained a wide reputation that has been well maintained to the present day. In recent times there have been many improvements in the equipment to make it in every way an up-to-date plaster plant. Since 1900 the Lycoming Calcimining Company of Williamsport, Pa., have owned and operated the mill as well as the famous Garbutt mine. Recently the capacity of the plant was materially enlarged by putting in two Hamilton-Corliss engines, doubling up the crushing outfit and adding to the calcimining equipment, making the present output no less than 250 tons per day. The company feel that they should now be able to take care of all the demands that their wide circle of customers may make upon the output for the present at least, although the ever growing popularity of gypsum products seems to have no limit.

The Charlotte Plaster Company, Charlotte, N. C., are building an addition to their plaster mixing plant and will install machinery to double their capacity.

Anthony Culkin, plaster contractor, is finishing the interior of the fine new depot for the New York Central Railroad at Oswego, N. Y. He is making a very fine job of it.

The Huntsville Wood Fiber, Plaster and Lime Company, Huntsville, Ala., has been organized with \$25,000 capital to manufacture patent plaster. The factory building is now under construction. The officers are A. M. Booth, president; E. M. Forbes, vice-president; James R. Stevens, secretary and treasurer; A. G. Proctor, general manager.

A recent visitor to ROCK PRODUCTS was W. A. Toohy, representing the Imperial Plaster Company of Toronto and the Stinson-Reeb Builders' Supply Company, Ltd., of Montreal. Mr. Toohy advises that the season for both plaster and builders' supplies, while starting a little late, owing to the protracted rainy season in the early part of 1907, has been quite successful, and that this year will be a most prosperous one with both concerns he represents. The demand for Portland cement has been very good, especially in the Eastern Canadian districts, the Stinson-Reeb Company handling several Canadian Portlands as well as American brands, among which are Giant, Edison and Atlas.

In Rebuttal.

[Mr. Brazil's poem in ROCK PRODUCTS for September has been well received, and provoked no little pleasure among the craft. Now comes Thomas McNeal, superintendent of the Texas Cement Plaster Company at Quanah, Texas, in poetical rebuttal. Mr. McNeal is the oldest mechanic in point of service in the Southwest, having made the first kettle used to make plaster out of gypsite, and having several economizing mechanical inventions to his credit.]

I farmed Ohio's rugged hills,
And toiled late and early and hard;
But roots and rocks and stingy soil
Robbed me of my just reward.

I farmed Kansas' level prairies,
Where the hungry grasshoppers hop;
So few of our daddies' dollars
Did in my weasel-skin drop.

With the festive Texas longhorn
My trusty breaking-plow to haul,
I broke the rolling prairie sod
And the command, "Swear not at all."

With all the talent given to me,
I taught the young idea to shoot;
For reward, the irate parent
Lifted me with his fourteen boot.

Thus each rose a thorn secreted,
And bitter was mixed with every sweet,
Until I struck a plaster mill,
When smiling fortune did me greet.

Among the myriad plaster men,
Who sweat and labor night and day,
Uncle Sam laid his choice on me
To put his official O. K.

And although his letters patent
Are opposite my humble name,
I'm not the nation's President,
And yet I look it, just the same.

My eighteen years of hard service
Have broadened and toughened my cheek,
Till I'm immune from the troubles
Of the young novice "up the creek."

I sleep the sound sleep of the just,
While the big wheels humming round go,
And (in my gentle, peaceful dreams)
Pity the poor fellow who "don't know."

Our kettles don't have time to "stick,"
The reel never gets on the "bum;"
Our customers very rarely "kick,"
And so we have a peaceful home.

Even the dull dun mule has learned
His mellifluous voice to raise,
And sing of the sump he can't fall in
In unmeasured peans of praise.

Now, gentle reader, give us a call,
And we'll make you our welcome bow;
For a plaster mill is "easy"
If you just only "know how."

Plaster Mill Burned.

OAKFIELD, N. Y., Sept. 28.—Fire, entailing a loss of about \$75,000, yesterday afternoon totally destroyed the United States Gypsum Company's mill at Steven Street and Weber Avenue in this village. The fire started at 3:15 o'clock and by 4:30 nothing was left of the mill.

There was a great deal of valuable machinery in the mill, including a 50-horsepower engine. It was insured.

BOTH INSIDE AND OUT.

Plaster Products Covering All Possible Specifications Provided by Progressive Manufacturers.

The Wheeling Wall Plaster Company, whose general offices are located in the Schmulbach Building, Wheeling, W. Va., are taking rapid strides forward in the matter of supplying a full line of the kind of plaster products now rapidly developing a great demand in the industrial world, and which place this progressive concern among the foremost building material enterprises in the country. They are now inaugurating improvements which will increase the capacity of their Wheeling plant by one-half. They have also just increased their capital stock to \$200,000, to enable them to enlarge and operate their already extensive gypsum and sand holdings. It is a close corporation and the additional stock has all been subscribed by the present stockholders.

The company have originated three products which have taken front rank among the building materials of the country, namely, the "Wheeling," "Gyp-rock" and "Cementon" brands of wall plaster. With the first of these probably every builder in the Central States is familiar. It is a standard brand and will continue to be one.

"Gyprock" asbestos is a fireproof plaster manufactured of pure gypsum rock and asbestos. It is the result of long experience and a series of practical tests for the purpose of producing a fireproof, sanitary wall plaster.

"Cementon" outside plaster is for use in plastering the outside of fine residences, giving a finish both durable and economical, and it is fast growing in favor. "Cementon" is both fire- and water-proof.

The company own holdings in the famous Port Clinton gypsum fields; and it is from this gypsum that the new "Gyprock" asbestos plaster, advertised in this issue of ROCK PRODUCTS, is made, as well as the well-known and long-established "Wheeling" brand so extensively used.

The company are shipping their products all over the Central States, and some of the finest structures built in this era of costly residences, Government and office buildings, are built with the use of Wheeling wall plaster and other building materials which the company distributes.

President Marshall of the Wheeling Company is a typical West Virginian, progressive and optimistic. He is especially proud of his new "Gyprock" asbestos plaster.

One of the largest orders for this new product was recently made for a million-dollar Kentucky residence.

The variety and quantity of builders' supplies the company handle is shown by the fact that they furnished nineteen different materials on the Wheeling Postoffice building and fourteen different materials on the Schmulbach skyscraper, both recently finished at Wheeling.

Following is a list of the officers: R. Walter Marshall, president; Fred W. Mahan, general manager; James R. Birkbeck, Jr., general superintendent; John J. Minkemeyer, secretary; George B. Barr, sales manager; Stanley Floyd, auditor; Horace W. Blocksom, traffic manager; William H. Knierim, assistant secretary; William H. Sebring, factory superintendent; Charles I. Crawford, yard superintendent.

The Standard Wall Plaster Company, Oklahoma City, O. T., has been incorporated by A. J. McMahon of Oklahoma City and John S. Carter and John L. Holmes of Chicago.

The Oklahoma Gypsum Company of Minneapolis, Minn., and Okeene, O. T., has been incorporated by C. F. Naglin, M. N. Leighton and E. G. Potter of Minneapolis, Minn., and N. E. Wilson and H. R. Black of Okeene, O. T. They will exploit, manufacture and market gypsite deposits in Oklahoma.

The Webster City Stucco Retarder Company, Webster City, Ia., lost their plant by fire on October 4. It is estimated that the loss will reach \$25,000, with \$7,000 insurance. Manager Parkhurst announces that plans will be prepared at once for concrete for buildings larger and better, and the business continued.

Journeymen plasterers in San Francisco demand \$6 per day. There is no mechanical employment that offers such a bright future to the intelligent apprentice as does the plastering trade. The condition in San Francisco applies as well to all the larger cities, and very few young men are improving the opportunities in this direction. It is only a step from the good workman to the reliable contractor, and there is plenty of room in the plastering business, for it is growing faster than any other industry today. In less than five years the demand for competent, practical plasterers will be at least tenfold what it now is.

Clay.

ASHLAND FIRE BRICK COMPANY.

One of the Leading Brick Industries of the United States.

ASHLAND, KY., Oct. 17.—Few users of firebrick realize the vast amount of labor and care that go into the manufacture of a really first-class firebrick. Most people's idea of a firebrick yard is the old fashioned red-brick plant, where the horses ran around in a circle and squeezed mud picked up on the same lot, into molds, which were dumped out in the sun to dry, and finally stacked up in the kiln. Nearly everybody who visits a firebrick yard for the first time makes some exclamation of that sort.

Few people realize how carefully the clays that enter into brick have to be watched. There are but two places in the United States where high-grade brick can be manufactured. Nature has been very economical in her distribution of valuable deposits of fireclay. Kentucky fireclays have long been famous for their superior quality. An English expert, a number of years ago, in reading a paper before the Brickmakers' Association, declared them to be the highest type of fireclays that he had ever encountered.

Fireclays are a combination of silica and alumina, with a very small trace of iron and lime. The less iron and lime they contain the better they are, though some iron is absolutely necessary in order to form a bond. Silica and alumina in their pure state cannot be bonded.

The theory used to be that the more silica brick contained the better it was, but today just the opposite prevails. Professor Reis of Cornell (who is the foremost authority in the United States upon clays) has proven conclusively that the greater amount of alumina a brick contains, the more heat it will stand, and at the same time it can be better shaped.

The Ashland Fire Brick Company of Ashland, Ky., have for a long time, on account of their having one of the few rare deposits of high alumina clays, been making a specialty of brick for rotary cement kilns, as this clay has proven to be of exceptional value for this sort of work. This company has a plant in Carter County, Ky., where these bricks are made, the plant being situated right in the heart of the Carter County flint clay district. The clays are first taken from the mine and put on a large dump, where they are weathered for some time—it having been proven that clays which are weathered give far better results than clays which are taken fresh from the mines—as is done in most cases. The Ashland Fire Brick Company weather all their clay from six months to three years. It is then taken to the grinding-pans, where it is ground until very fine, and it is taken from the pans by hand to the molding-tables, where it is placed in molds by hand (all high-grade firebrick being made by hand exclusively), and then dumped upon the drying-floor, where it dries for



PLANT OF THE ASHLAND FIRE BRICK COMPANY, ASHLAND, KY.

several hours, when it is taken up and re-pressed. This re-pressing makes it more perfect mechanically, squaring it up, which makes it lay up much better than the unpressed brick. It is then taken to the kilns, where it is burned about seven days, at a very high temperature, and is then ready for the market.

The market of the Ashland Fire Brick Company for cement clay lining is extremely wide, as they make shipments for this kind of material to Japan, Australia, Mexico, Canada, Cuba, and nearly every State in the Union where cement is made.

The Ashland Fire Brick Company was organized in 1886, with one little plant making 8,000 brick per day; today they have five large plants, with a combined capacity of 15,000,000 high-grade, hand-made firebrick annually. Their plants are so distributed that they take advantage of all clays which occur in that district. For instance, in Carter County, Ky., they make the higher grade of brick from the famous Carter County flint clays; then at Ashland they have two plants where they make high-grade brick and at the same time take advantage of the very fine grade of plastic clay which occurs within the city limits of Ashland—which sort of deposit no other company in that district has.

Here too, they make brick for cupolas and for certain parts of blast furnaces and hot-blast stoves, and for any work where a tougher brick is required. At Ironton, O., they have two more plants, where brick for general purposes are made, the same as at the two Ashland plants. Another feature of the Ashland plant is ground clay. Few buyers or firebrick manufacturers pay much attention to the quality of their ground clay. This company give to their clay-grinding the same careful attention that they give to the manufacture of brick. They also weather all clays before they grind them, thereby eliminating or neutralizing any lime that may occur in them—as all plastic clays have a slight trace of lime. Then, after it has been weathered for a good length of time, they grind it and screen it through a very fine-meshed screen, making it very even and fine; and as it has been weathered it is very plastic and lays very smoothly. There is no necessity for boiling

it, as has to be done with most other ground clays. This clay is much sought after, and used by wall-plaster companies and paper-mills. They have an extensive trade in it, selling many thousand tons per year.

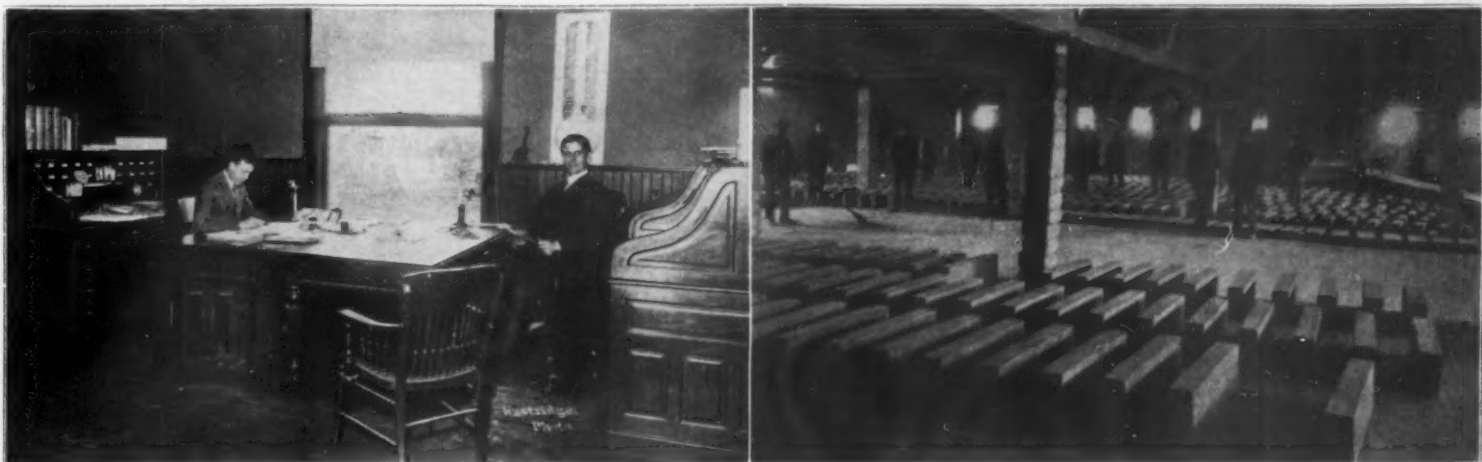
The active officers of the Ashland Fire Brick Company at the present time are: W. B. Seaton, president; E. H. Gartrell, secretary and H. D. Savage, treasurer and sales manager.

Shortage of Clay Products.

The present shortage of vitrified brick for paving purposes is accounted for in a measure by the large amount of these bricks that are now being used in the construction of the walls of factory buildings and all that class of structures where the common clay brick is not considered to be good enough, or where simply something different is required. The shortage of paving bricks has not been confined to any one locality, but throughout the middle West very generally. At least 25 per cent more could have been sold this season if the dealers and contractors could have been supplied regularly.

Sewer pipe is in the same category. Orders have been delayed again and again, and there are dealers who complain that they have only received about half the pipe ordered after long delay in shipments. It simply looks as if the pipe manufacturers lack capacity. The excuses they send to their customers really indicate inability to keep up with the demand. There is a good profit in sewer pipe when manufactured upon the right basis, but it looks as if the makers fail to realize their opportunities. The demands of little towns for sewer pipe and fittings seems to be entirely overlooked, while even in the big cities the supply is very short of possible sales.

The Clay Products Company of Texarkana, Ark., recently organized with a capital of \$25,000, has purchased the pottery of John E. Parkhurst, about three miles north of Texarkana, and will quadruple the capacity of the plant. The object of the company is to manufacture jugs, jars, vases and a general line of face, fire and vitrified brick.



H. D. Savage, Sales Manager.

E. H. Gartrell, Secretary.

Floor Filled with Shapes.

SCENES IN THE OFFICE AND WAREHOUSE OF THE ASHLAND FIRE BRICK COMPANY.

Victory for Brick Manufacturers' Association.

As a result of the recent decision that the American railroads must make no distinction in rates on various kinds of brick, and the subsequent decision of the various railroad companies, that all bricks must, in consequence, be shipped at the highest rate, a determined battle for the rights of the manufacturer was started early in August by the National Brick Manufacturers' Association.

In the first place, the Stowe-Fuller Company, Cleveland, Ohio, appealed to the Inter-State Commerce Commission to restrain the Pennsylvania and Baltimore and Ohio Railroad Companies from raising the rates on bricks, or from charging different rates on the three kinds of bricks turned out of one kiln and shipped from points in Eastern Ohio to New York. The Commission decided that the railroads must not make any distinction between these three kinds of bricks, which are so nearly alike that it needs an expert to distinguish them. This applies to fire, paving and building bricks. The highest rate was charged on firebricks, the next on building bricks, and the lowest on paving bricks.

The railroad companies thereupon advanced the building and paving brick rates to the rate charged for firebricks, this advance in rates being scheduled to take place on September 1, 1907.

Upon the receipt of this notice of the advance in rates, the members of the Brick Manufacturers' Association held a meeting, at which it was decided to enter a formal protest against the raise in rates until at least the contracts at present on their books were completed and shipped, and it was also decided that unless the manufacturers could obtain redress, the Association would take the matter into court and ask for an injunction restraining the railroads from putting the new rates into effect.

Later, an injunction was obtained restraining the railroads from increasing their rates pending appeal, and a further petition to the Inter-State Commerce Commission to compel the railroads to postpone the advance until January 1, 1908, in order that the manufacturers might fill the contracts on hand which were taken at a price based on the old rates, and also to work off the old bricks that were manufactured for shipment at the old rates, has been granted, and the new interstate rates on all bricks will remain the same until January 1, 1908, on shipments from the Central States to eastern points.

In the meantime the brick manufacturers and the railroad authorities will hold a number of conferences in an effort to adjust the rates to the satisfaction of all concerned. It is thought locally that this will readily be accomplished, for it is already granted that the manufacturers have won a signal victory, and will not be slow to hold their advantage.

More Vits Needed.

Street Commissioner Travilla of St. Louis, Mo., is distressed over the shortage of paving brick at that great market. It is impossible to improve half of the streets for which the contracts have been let. There are more than ten miles of streets in the city now requiring paving which could be placed on final passage before the Municipal Assembly if there was any hope of securing the material to build them.

"Enough vitrified brick is not being made in St. Louis," he said, "to more than half supply the orders being sent to the factories by the street contractors. It is also impossible to buy them from outside the city. We were able to secure 1,000,000 from Galesburg, Ill., but they won't sell us any more. There seems to be such a wave of prosperity over the country, and so much street improvement going on, that enough brick cannot be made."

Barring asphalt, brick is the cheapest paving material St. Louis has. The estimates on the latter material run about \$2.25 a square yard. Asphalt costs \$1.90, while granite blocks and wood blocks run higher. The latter is the highest-priced paving, running over \$4 a square yard.

Make a Full Line of Bricks.

PAOLA, KAN., Oct. 1.—A ROCK PRODUCTS traveler called on Dr. A. Reichard, who is now the proprietor of the Paola Brick and Tile Works. This industry has been established eighteen years and has been carried on at its present site for ten years. I was unable to grasp the genial Doctor's hand, for as he explained to me, it was liberally coated with grease owing to assisting in adjusting a kiln top which had dropped in. The Doctor went on to say that they have a fine bed of blue shale and that in digging a well, they found it was 45 feet deep in addition to being 25 to 30 feet high in the bank. The company operates one up-draft and three down-draft kilns, and their dry-house will hold 84 carloads of material. An extra engine and blower is used to extract heat from the kilns to the dry-house. They manufacture firebrick, terra cotta, dry pressed, end cut (mud) brick, vitrified paving brick and blocks; also the following sizes of farm tile: 2 1/4, 3, 4, 5, 6 and 8-inch.

Roofing.

The National Association of Master Composition Roofers of U. S. A.

P. LaGoullon, Pittsburg, Pa. President
S. L. Foster, Norfolk, Va. First Vice-President
H. C. Smithers, Indianapolis, Ind. Second Vice-President
C. A. Monks, Louisville, Ky. Secretary and Treasurer

Official Organ, ROCK PRODUCTS.

The Biggest Leak.

Every composition roofer is busy now. The crop of repair work was never larger than this fall, while the amount of new work is not as great as it was last year. There is still the great trouble about labor of the intelligent sort that leaves the contractor with a profit after the work is completed and the bill collected. It is one of the misfortunes of the composition roofing business that the men who actually do the work never really learn their trade. One man who knows how is detailed upon a job with a gang of misfits, and the one roofer actually does most of the work. One fellow who is a bit of a wag recently remarked: "There are two men in my gang who are principally useful to me merely to get the cussing that invariably goes with the job." Still these cussing dummies cost almost as much money as the man who really counts for something in the work—and it all comes out of the boss roofer. Repair work, which is the big feature just at the present time, calls for more skill than the laying of new work, where all the material is perfect and every square foot is to be treated just alike. A good repairer has to be a resourceful man, quick to realize what is necessary and to adopt the shortest and best method of tackling many difficult kinds of trouble. Perhaps there is no other trade where the value of the workman counts for so much in the matter of making profits as that of the practical roofer. No two repair jobs are exactly alike, and there is no definite medium of comparison; but one man will invariably be a money-maker for the boss, while another man will be a money-loser every time by making it necessary to go over his work time and again to take care of the complaints entailed by his inefficient work. The trouble is that the workmen don't use their think tank with what they are doing. If good personal interest could be injected into the equation it would help a whole lot.

COMPOSITION ROOFING SPECIFIED.

CHICAGO.—Architect Henry L. Newhouse, 4630 Prairie Avenue, this city, has plans prepared for a store and flat building to be located at 648 Loomis Street, for M. Novock. Brick, stone, and composition roofing are specified. Cost, \$15,000.

CHICAGO.—Architects Beers & Beers, 168 Michigan Avenue, have plans prepared for a three-story flat building for E. J. McGeeny, 181 West Madison street. It will have an area of 50x76 feet, and cost \$20,000. Brick and composition roofing specified.

CHICAGO.—Architect S. M. Seator, 105 Washington Street, has prepared plans for the erection of a two-story flat building, covering 22x56 feet. Brick, stone and composition roofing called for. Cost, \$7,000.

CHICAGO.—Architect Z. T. Davis, 79 Dearborn Street, has plans for a three-story apartment house to be erected at the corner of Michigan Boulevard and Sixty-third street, to cover an area of 50x90 feet. Brick, stone trimmings and composition roofing specified. Cost, \$30,000.

CHICAGO.—Architect Robert S. Smith, 167 Dearborn Street, has plans prepared for an automobile salesroom covering an area of 50x160 feet on Michigan Avenue, north of Twenty-sixth Street. Brick, stone and composition roofing.

CHICAGO.—Architect F. L. Barrett, 2695 North Forty-Second Avenue, has plans prepared for a factory building for the Great Northern Moulding Company, to be built at Twenty-third Street and Western Avenue. It will be seven stories, 100x200 feet, and be constructed of brick and stone, with composition roofing.

DEKALB, ILL.—Architect J. C. Llewellyn, 168 Dearborn Street, has the plans for a new school building to cost \$35,000. It will be three stories, 75x115 feet. Specifications call for brick, stone and composition roofing.

CHICAGO.—Architect Theodore Duesing, 1293 West Twenty-second Street, has plans prepared for an addition to David Brothers' factory at Twenty-fourth and Wentworth Avenue. It will be two stories, 42x50 feet. Brick and composition roofing are specified.

HIGHLAND PARK, ILL.—Architect J. J. Flanders, 80 Dearborn Street, Chicago, has completed plans for the public school to be erected here. The structure will be two stories, 56x70 feet, of brick and stone, with composition roofing. Cost, \$12,000.

LA GRANGE, ILL.—Architect R. C. Fletcher, 172 Washington Street, Chicago, has plans prepared for a two-story building for Merton F. Hill. Construction of brick with composition roofing.

INDIANA HARBOR, IND.—Architect Frank Roy, 9140 Commercial Avenue, Chicago, has plans for a flat building for Charles Martin, Indiana Harbor. It will be pressed brick, composition roofing, two stories, 25x64 feet, and cost \$7,500.

CHICAGO.—Architects J. F. & J. P. Doerr, 138 Washington Street, this city, have plans prepared for a three-story flat building at 4833 Vincennes Avenue for Thomas Burns. It will cover an area of 25x76 feet. Specifications call for brick, stone and composition roofing.

CHICAGO.—Architect A. Sandegren, 164 Dearborn Street, has plans prepared for a three-story apartment house on Greenwood Avenue, near Forty-fourth Street, for L. F. Rabe. The building will be 50x86 feet, brick, stone and composition roofing. Cost about \$45,000.

PHILADELPHIA.—John M. Gill & Co., builders, are about to begin the erection of a six-story warehouse at 2511-2515 North Broad Street for Hildebrand Brothers. It will cost \$50,000. Specifications call for brick, stone, iron and composition roofing.

PHILADELPHIA.—Architects Hewitts, Stevens & Paist have plans prepared for the erection of a two-story warehouse, 78x122 feet, for the Union Draw Steel Company at Ninth and Willow Streets. It will be built of brick, stone and iron, with composition roofing.

NEW YORK CITY.—Architect Jacob H. Ansler, 1058 Jackson Avenue, has plans prepared for the erection of a six-story flat building for Susswein & Hermann, 325 East One Hundred and Fifth Street. Brick and limestone are specified. Cost estimated to be \$45,000.

PENSACOLA, FLA.—Architects Carpenter, Blair & Could, 475 Fifth Avenue, New York City, have plans prepared for a large bank and office building for the American National Bank. It will be ten stories, 58x92 feet, fireproof, with composition roofing. Cost, \$200,000.

NEW YORK CITY.—Architect Benjamin W. Levitan, 20 West Thirty-first Street, has plans for a twelve-story office building 25x124 feet. It will be of fireproof construction and cost \$300,000.

NEW YORK CITY.—Architect Benjamin W. Levitan, 20 West Thirty-first Street, has plans for a business building to be erected at 11 West Thirty-fourth Street for R. Smith & Co. It will be six stories high, fireproof construction, and cost approximately \$400,000.

NEW YORK CITY.—Architect Charles W. Romeyn, 55 Broadway, has plans prepared for the Westcott Express Company, Madison Avenue and Forty-sixth Street, for the erection of a seven-story stable, of brick, stone and iron, with composition roofing.

NEW YORK CITY.—Architects Pollard & Steinam, 234 Fifth Avenue, have plans for a twelve-story apartment house to be erected at 136 West Fifty-seventh Street for P. McL. Merrill, 259 Fifth Avenue. It will be of fireproof construction and cost \$500,000.

NEW YORK CITY.—Architects Neville & Bagge, 217 West One Hundred and Twenty-fifth Street, have plans for the erection of a six-story building of brick and stone, with composition roofing. It will cost about \$120,000.

BROOKLYN, N. Y.—Architect G. Erda, 824 Manhattan Avenue, has plans for a four-story flat building for Julius Pearlstein, 795 Manhattan Avenue. It will be built of brick and stone, with composition roofing, and cost \$15,000.

BROOKLYN, N. Y.—Architect Lawrence E. Blake, 1794 Seventy-fourth Street, has plans for the erection of eight dwelling-houses, each 20x57 feet. They will be of brick, with composition roofing, and cost about \$32,000.

NEW YORK CITY.—Architects Bernstein & Bernstein, 24 East Twenty-third Street, have plans for two five-story buildings at 129-135 Cherry Street, to be built of brick and limestone, with composition roofing. Estimated cost, \$80,000.

"KOSMOS"

Kosmos Portland Cement is the product of a model plant, using high grade raw materials and under the direction of a staff of experienced cement engineers.

It is guaranteed the equal of any American Brand of Portland Cement and will be found to run uniform



in color, strength and fineness. It is suitable for any class of work and is especially recommended where the requirements are exacting.

Manufactured by the

Kosmos Portland Cement Co., Inc.

BUSINESS OFFICE: 614-616 Paul Jones Bldg., Louisville, Ky.

WORKS: Kosmosdale, Jefferson Co., Ky.

**BEST
FOR**

STONE SAWING
ROOFING
CEMENT BLOCK FACING
STUCCO
WHITE PLASTER

Washed White Flint Sand

Prices, Samples and Freight Rates furnished on application. Write us.

United States Silica Co.

1044 AMERICAN TRUST BLDG.

Works: Ottawa, Ill.

CHICAGO, ILLS.

**ARE YOU INTERESTED IN
CEMENT WATER-PROOFING?**

MAUMEE WATER-PROOFING COMPOUND

is made in a dry powdered form.

Added to cement work, of any character, will make concrete work, cemented walls, cisterns, reservoirs, sewers, conduits, etc., etc. absolutely impervious to water and dampness.

IS NOT A WASH

From 1% to 4% to each 100 pounds of cement in different classes of work, will insure dry and waterproof results.

Indispensable for cement blocks, tiles, sewer pipes, silos and tanks.

Leaks in old cement work can be effectually closed by the use of our compound.

Try a sack if you would see the best Water-Proofing Compound on the market.

Prices quoted on car, and ton lots, upon application.

Send for full particulars, testimonials, etc.

THE MAUMEE CHEMICAL COMPANY
312 St. Clair Building
TOLEDO, OHIO

The BATES VALVE BAG

The strongest and most perfect
[package for shipping and
storing cement]



Economical packing and smallest
percentage of breakage

IT IS WATERPROOF!

The West Jersey Bag Co.

Front and Elm Streets

CAMDEN, N. J.

Tell 'em you saw it in ROCK PRODUCTS.

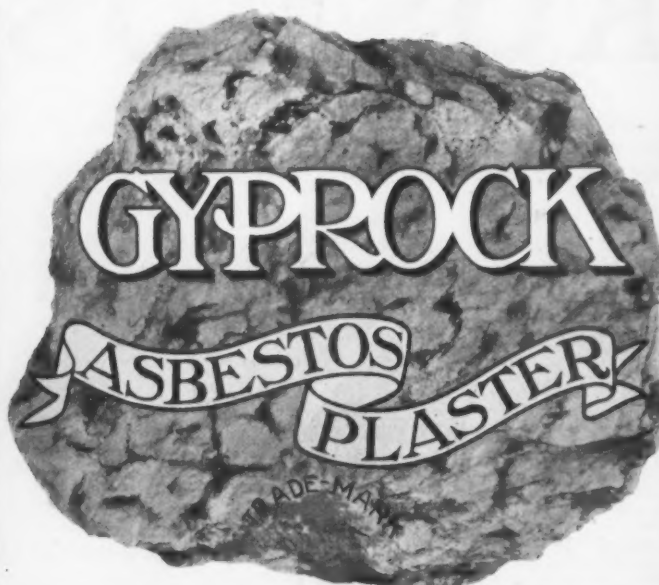
THE NEW WALL PLASTER

Manufactured

FROM PURE GYPSUM
ROCK AND ASBESTOS
PREPARED IN BOTH
NEAT AND SANDED
FORM. ELASTIC—
ECONOMICAL—PER-
FECT WALL PLASTER



FIRE-PROOF



Our Guarantee

WE GUARANTEE
"GYPROCK" ASBES-
TOS PLASTER TO BE
UNSURPASSED FOR
STRENGTH, DURA-
BILITY AND EASY
SPREADING QUALI-
TIES * * * * *



SANITARY

"IT SPREADS LIKE BUTTER"

WRITE FOR PARTICULARS

MANUFACTURED
EXCLUSIVELY BY

WHEELING WALL PLASTER COMPANY

WHEELING
W. VIRGINIA

A FIRST-CLASS MILL WITH AN UNEXCELLED PRODUCT



We Guarantee K. C. Brand Portland Cement to be Fully the Equal of any
Brand of Portland Cement Made.

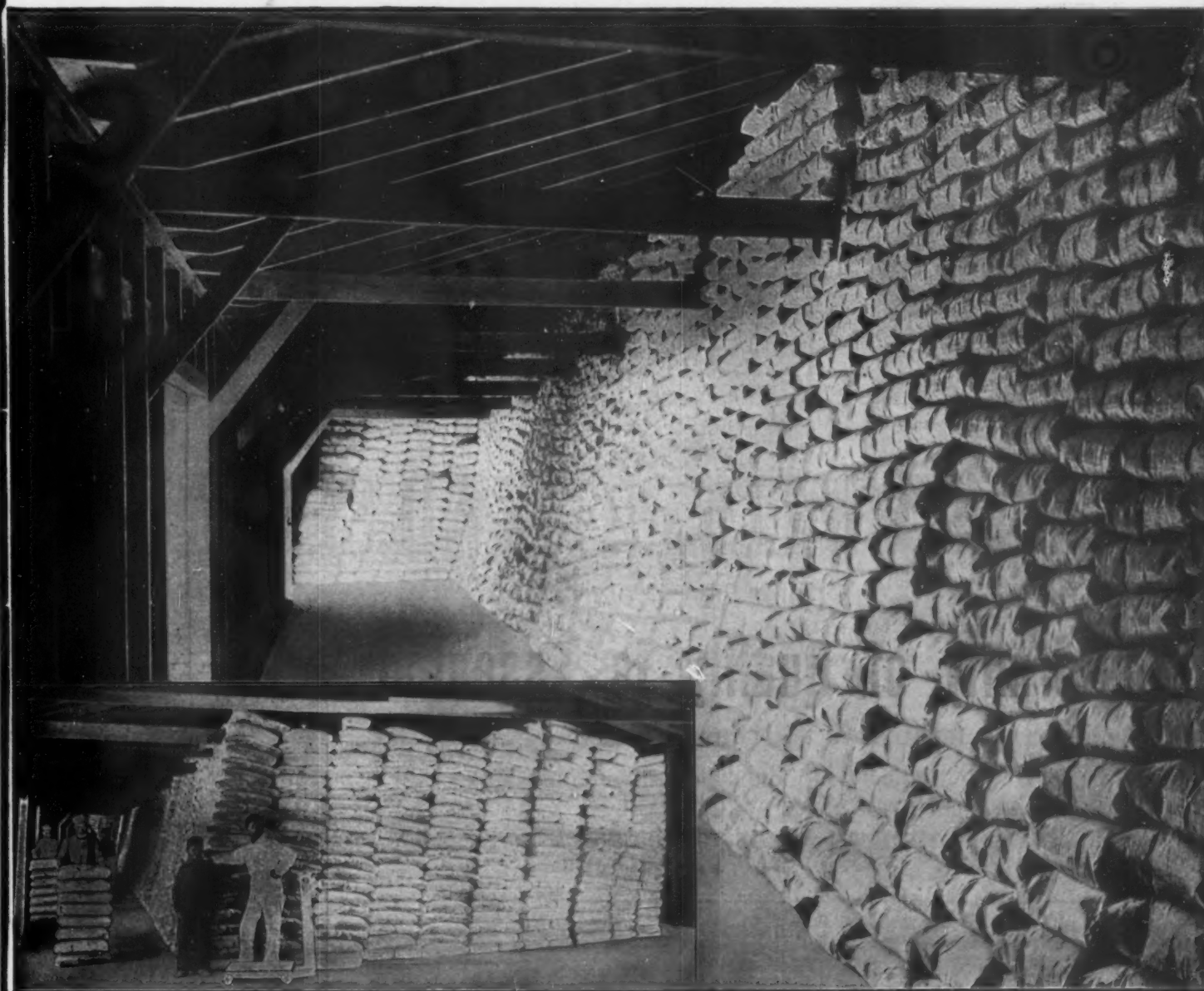
The Kansas City Portland Cement Co.

R. A. Long Building, KANSAS CITY, MO.

Tell 'em you saw it in ROCK PRODUCTS.

OBSERVE THE COMPACT STORAGE OF UNIFORM PACKAGES

MADE POSSIBLE ONLY BY THE BATES SYSTEM



The Bates Valve Bag saves storage room and labor at the warehouse end. It means economy and convenience to the dealer as well as the manufacturer. The wise dealer will insist on getting his Cement, Hydrated Lime and Plaster in Bates Valve Bags.

THE BATES VALVE BAG COMPANY

1411 SCHOFIELD BUILDING

CLEVELAND, OHIO

Tell 'em you saw it in ROCK PRODUCTS.



THE LONGEST CONCRETE SPAN

Pyramids have been constructed in the past.
Massive water dams are being built to-day.
Steel is being used for spanning great distances.
Concrete made with WHITEHALL PORTLAND CEMENT
IS SPANNING 233 feet.

Walnut Lane Bridge (Philadelphia) stands as an engineering wonder to-day.

IT IS THE LONGEST CONCRETE ARCH IN THE WORLD.

WHITEHALL PORTLAND CEMENT is used exclusively in this work.

This is a great compliment to the quality and uniformity of WHITEHALL.

September number of "Cementology" will treat of this bridge. Extra copies furnished upon request, by the publishers—

THE WHITEHALL PORTLAND CEMENT CO.

BOSTON

1719 Land Title Building, PHILADELPHIA

ATLANTA

Uniformity of Quality Is Essential

in cement for work of this character.

The Department of Public Works of the City of Philadelphia has tested WHITEHALL PORTLAND CEMENT for the past six years with the following results:

	SPECIFIC GRAVITY	SETTING		ULTIMATE TENSILE STRENGTH IN POUNDS PER SQUARE INCH					
		Time in Minutes		1 Neat			1 to 3 Standard Quartz Sand		
		Initial	Hard	24 Hours	7 Days	28 Days	7 Days	28 Days	
Year of 1901 . . .	3.148	82.4	326.5	524	713	765	232	313	
Year of 1902 . . .	3.137	66.6	326.0	444	660	731	201	304	
Year of 1903 . . .	3.140	64.0	322.0	457	749	797	236	311	
Year of 1904 . . .	3.157	64.0	346.0	450	716	759	246	336	
Year of 1905 . . .	3.150	56.0	313.0	446	697	744	252	335	
Year of 1906 . . .	3.166	55.0	341.0	392	705	759	262	354	

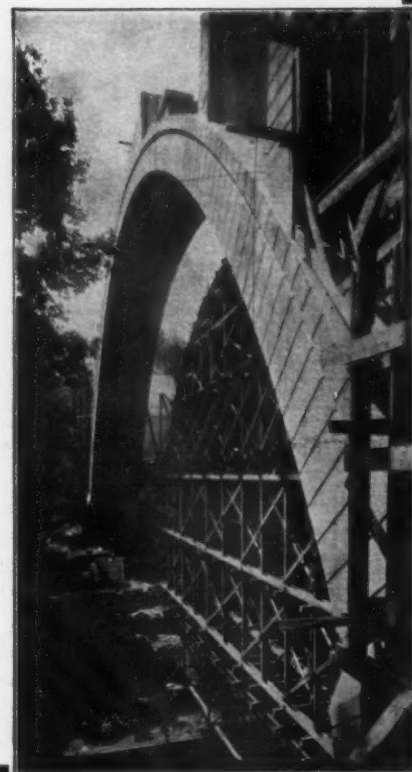
G. S. WEBSTER

Chief Engineer

W. PURVES TAYLOR

Engineer in Charge

Whitehall Is the Acme of Perfection



Tell 'em you saw it in ROCK PRODUCTS.

Concrete Engineering

NEW IDEA IN REINFORCEMENT.

Successful Public Test of the New Barton System of Concrete Construction.

Francis M. Barton, architect, Royal Insurance Building, Chicago, has invented an ingenious system for reinforcing concrete, patents for which have been allowed. On October 14 he conducted a public test of his system by loading a properly proportioned model to demonstrate the relative value of the construction. This model was carefully calculated at 1-12 values parallel throughout. This is in accordance with good engineering theory that a test made 1-12 values lateral and in height (which means that all steel and concrete areas used would be 1-144 of the actual size used in a full-sized model) would carry 1-12 of the actual load that a full-sized building would carry.

The columns were octagonal, $1\frac{1}{2}$ " in diameter, with four angle irons with three 8" legs made of No. 20 black iron with pipe separators $3\frac{1}{4}$ " to center, and same wrapped or hooped with .023 wire set with $\frac{1}{8}$ " pitch. The carrier rods and truss rods forming column head were $1/16$ " in diameter. Floor slab rods were .025 wire set $2/3$ " apart. The columns and walls were set 18" and 20" to center and same from wall. The floor slab was $13/16$ " thick.

The model, which contained eleven square feet loading area, was loaded up with 1,872 pounds of sand and brick, the brick being used on outside to contain the sand, which means that 170 pounds of actual load per square foot were loaded on this slab, with scarcely any perceptible deflection (indicating that total deflection for proportionate loading would come well within the prescribed limits for first-class and acceptable construction), and which, in a full-sized building would mean that it would carry 2,040 pounds per square foot, or fifteen to twenty times as much as is required in ordinary factory buildings.

The model was twenty-four days old at the time of the test, the concrete consisting of a one to five pound mixture of Portland cement and clean torpedo sand. (The sand was properly tested for voids to determine the amount of cement before mixing.) The mixture was made very wet and poured into the centering.

The model was loaded in the presence of the following gentlemen, who one and all attest to the correctness of the loading as well as every other condition of the test: T. L. Condon and T. T. Sinks, of Condon & Sinks, civil engineers; W. D. Matthews, of the Chicago Board of Underwriters; Augustus D. Curtis, of Curtis-Leger Fixture Company; N. Ronneberg, of Westcott & Ronneberg, civil engineers; Fred K. Irvine, Rock Products; J. B. Foote, of Foote Bros. Gear and Machine Company; M. Garrity, civil engineer building department, of Chicago; H. A. Beckel, American Contractor; W. H. Reid, of Marshall & Husehart Machine Company; E. S. Hanson, Cement Era; Rodman M. Brown, of Brown & Read.

The Barton system of reinforced concrete is a complete innovation on previous methods of construction, and has been especially designed to carry heavy loads. It has no beams nor girders to take up space and reduce the light. There is no blacksmithing work required, thus saving a big item of cost in all other methods now in use. The columns and form work are so designed that three stories are under construction at one time, which means a very considerable saving in the cost of construction, and it also means that concrete buildings may be erected in less time than older methods.

By this ingenious construction there is formed at the job a column head of eight trusses at which any common laborer becomes expert in a few hours. These trusses form a column head eight feet in diameter, which, in a sixteen foot span, leaves but a nine foot slab between column heads.

The extensions of the upper members of the trusses—the carrier rods—extend straight from column head to column head, and these carrier rods are inclined towards the center of span so as to form the proper position for slab rods. All rods are well secured in place before concrete is poured.

The columns are formed of four angle irons, each set three stories high, bound together with bolt and pipe separators. They may also be hooped. The bases are set and lined up in a steel structure. All rods and angle irons are stock and may be bought on the open market. All fabricating is done at the job.

Mr. Barton has had considerable experience in concrete and reinforced concrete construction, having made a life study of its uses and abuses. His knowledge is not based on theory alone, but on practical experience, he having built some very high class concrete and reinforced concrete structures, among which are the building for A. D. Curtis, of the Curtis-Leger Fixture Company, at Jackson Boulevard and Aberdeen Street, and the Adams & Elting Company's plant at Forty-fourth and Taylor Streets. The latter plant, all of reinforced concrete, will cost when completed at least a quarter of a million dollars.

Power Plant Constructed Within a Dam.

The Amhurst Construction Company, of Boston, Mass., were the designers and builders of the unique power plant for the Patapsco Electric and Manufacturing Company at Elliot City, Md. It is built within a dam in the Patapsco River, near Ilchester, on the Washington branch of the Baltimore and Ohio Railroad, about fifteen miles below Baltimore. The dam is 220 feet in length, and slopes obliquely to a



TEST OF THE BARTON CONCRETE MODEL.

height of twenty-six and one-half feet from normal tailwater to crest. At either end the buttresses and deck of the dam rise ten feet above the spillway, as a protection from the floods and to afford convenient entrance to the powerhouse. The spillway is 168 feet long, and the backwater extends three-quarters of a mile with an average width of 500 feet to the tailwaters of a cotton mill located at Ilchester. The dam is built of reinforced concrete, and the deck supported by nineteen buttresses, twenty-four inches thick at the bottom and sixteen inches thick at the top, and placed twelve feet apart. They were made of a mixture 1:3:6. The edges of the buttresses and of the openings are reinforced with $\frac{3}{4}$ -inch corrugated iron rods in groups of three. The shell of the dam is eighteen inches thick at the bottom and tapers to ten inches at the top. The concrete in the deck is 1:2:4 mixture reinforced with $\frac{3}{4}$ -inch corrugated iron bars at graduated distances down to $4\frac{1}{2}$ -inch centers. The shell extends only half way down from the crown on the downstream side. Its shape is such that the water is thrown away from the windows which are provided in the powerhouse underneath. On a clear day the light through these windows is all that could be desired, though on rainy days the illumination is not so good. The apron or shell on the downstream side carries the water of the spillway within sixteen feet of the tailwater, and falls about twenty feet, but as the bed of the river is somewhat rocky at this point there is no appreciable pitting.

At present only 108 feet of the dam is used for housing the power plant. This part of the dam is

fitted with a false ceiling hung five feet from the inside of the dam so as to protect the apparatus from any water that might seep through the outer shell of the dam. The ceiling slopes until it reaches the vertical sides forming the powerhouse. Very little water percolates through the outer shell of concrete, and that which does trickles along the underside to the drain at the bottom.

The part of the dam used for the power plant is 108 feet long, ten feet high and twenty-seven feet wide except at the buttresses, where the width is eighteen feet. The floor is built of reinforced concrete. The water is fed to the turbines through steel pipes passing through the outer shell on the upstream side, and discharged by draft tubes into the base of the dam, and from thence through a channel in the river bed out of the dam. The intake is five and one-half feet below the crest of the spillway, so that the trash racks are kept clear of driftwood and the like. The flumes of the turbine are seven feet in diameter. The flow through the feed pipe is controlled by a valve operated from the turbine chamber.

The electrical machinery is completely protected, and as far as flow and fall is concerned it can attain the highest efficiency. An important advantage of having the plant below the water is that the water falls through the top of the dam into and through the wheels below, thus avoiding the friction and other losses of power resulting from carrying the water through long raceways to the wheels. The saving in power, or the greater efficiency of the water, will be approximately equal to the difference between belt and direct-drive. It might be interesting to add that it is said that the present dam is the smallest that can be made in which a power plant can be installed.

Government Report on Concrete Blocks.

A wall constructed of good concrete blocks is as strong and stronger than a brick wall of equal thickness.

Concrete blocks, being easily molded to any desired form, will prove to be a far more economical building material than stone, which has to be dressed to shape.

Experience has proved concrete to be a most excellent fire-resisting material.

Concrete blocks, being hollow, tend to prevent sudden changes of temperature within an hour, making it cool in summer and easily heated in winter.

The hollow spaces provide an easy means for running pipes and electric wire. These spaces may also be used wholly or in part for heating and ventilating flues.—Bulletin No. 235 United States Department of Agriculture.

Water in Concrete.

The effect of water used in making concrete aroused an animated discussion among German concrete specialists in 1901, and to settle it about ninety-nine tons of test pieces were made up by various parties and sent to Prof. C. Bach of Stuttgart for test. This work lasted about four years, and the results have recently been published in the Zeitschrift of the Society of German Engineers. The records of the methods of preparing the test pieces and the amounts of water used in mixing the materials were forwarded with the samples. Tests of samples made by the same men under uniform conditions in Professor Bach's laboratory showed that the smallest amount of water which produced a mixture suitable for ramming gave the strongest concrete, but the highest degree of skill and care was required. Larger amounts of water enabled less competent workmen to produce good concrete and in practical work are an insurance against the injurious effects of varying degrees of moisture in the sand and stone, changeable atmospheric conditions and other factors. These statements, it will be observed, are the same as those made by concrete specialists in the United States and indicate the extreme care necessary in basing field methods on the results of laboratory experiments by trained workmen. The tests represented work done under a great variety of conditions and the specimens were representative of good German practice.—Exchange.

Concrete for Oil Tanks.

Experiments have been made to determine the availability of concrete for oil storage tanks and it was found that the material was entirely suited for the purpose. Accordingly a number of them have been built at El Paso, Texas, by one of the railroad companies of that section which is engaged in extensively handling oil from the fields of that State. Up to this time it was generally agreed that the presence of oil had some serious effect on the concrete, but if this is true, it was not shown by the experiments.

MODERN TUNNEL CONSTRUCTION.

Continued from page 3.

the work in June, 1907, and will have it entirely completed about November 1 of this year. The illustration on page 3 shows the concrete gang at work on the last section of the wall. The concrete lining was all carried forward from one end (the entrance of the tunnel). Near this point were set up platforms supporting a complete plant for handling and mixing the concrete materials, these being brought to the tunnel in standard-gauge dumpcars over the regular track of the road.

The arrangements for handling and mixing the concrete material were ingeniously devised by Mr. Cullen and were located about 200 feet from the tunnel entrance. A low temporary trestle 500 feet long, carrying an 18-foot gauge track, was erected 20 feet to one side of the standard-gauge, back of the mixing-plant, in a cut forming the approach to that end of the tunnel. The space between the trestle and the track was floored over for the storage of sand and stone. On a platform traveling on four double-flanged wheels on the wide-gauge track of the trestle were mounted a hoisting engine and a stiff-leg derrick with a 65-foot boom and carrying a 1-yard orangepeel or a 1½-yard Hayward clamshell bucket. The length of this boom and the fact that it traveled on a movable platform gave it a great range in unloading material from the cars on the standard-gauge tracks to the storage piles, or, when required, directly to the supply hoppers which raised the material to the mixer.

The mixing-plant consisted of a timber tower supporting a 1½-yard cube mixer and two storage-bins, one for sand and the other for stone, with a capacity of 85 cubic yards and elevated 25 feet above the track grade. The tower was on the same side of the track as the derrick trestle. Sand and stone were delivered to the bins by means of bucket elevators. Directly under the bins was a working platform on which the concrete materials were measured in a charging-hopper. The cement—because no other space was available—was stored in a shed on the other side of the tracks, from which it was raised by a bag elevator to a bridge leading to the charging-platform. On this bridge a flatcar moving on rails carried the bags across the track.

From the mixer a 3-foot gauge track extended through the tunnel, and the elevation of the mixer was such that the 1½-yard Koppel dumpcars which delivered the concrete to place could be loaded directly under it.

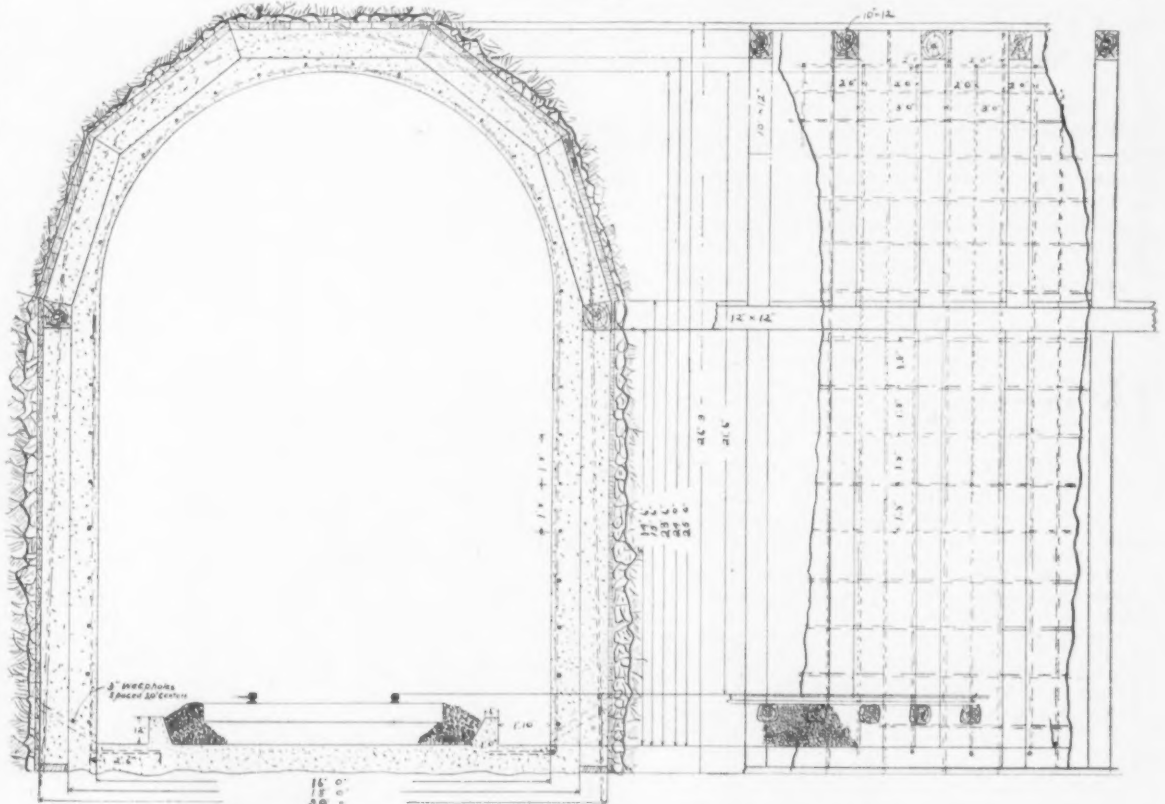
The concrete work was commenced at the end farthest from the mixing-plant, and the floor was laid first. As the floor was carried toward the near end the narrow-gauge track was raised and suspended from timbers overhead until the concrete had set. When the floor was finished and before starting on the side walls a standard-gauge track was laid, with a third rail for the 3-foot track. In building the side walls and arch two large flatcars were used, on which adjustable working-platforms were built, one platform a little higher than the other, but both capable of being raised or lowered to the level desired. These platform cars were placed end to end, and from the one nearest the mixing-plant an incline on a trussed underframe with two sets of wheels led down to the track. Up this incline the Koppel cars loaded with

the concrete mixture were run to the workmen on the platforms by means of a wire rope passing over and under the two platform cars and the incline, and reeved through sheaves at the end of the second car. The lower end of the rope was attached to the draw-head of the engine and the upper end to the draw-end of the Koppel cars. The engine, backing, would pull the loaded dumpcars up the incline and on to the platforms; reversing, it would meet and connect with the empty cars at the foot of the incline, and then, again reversing, would start to the mixing-plant for another batch. This ingenious arrangement was devised by the contractors and saved much handling of material.

After dumping the concrete on the working-plat-

each side of the arch, and was anchored to the timber lining by lag bolts, so the ribs were sustained without cross braces in the tunnel. The lagging of the arch ribs consisted of 2x6-inch plank in 6-foot lengths, carried up on the sides of the arch just ahead of the concrete, until a space 18 inches wide was left at the crown. Lagging in 3-foot lengths was then used to finish out the forms at this opening, the closing section of concrete being shoveled from the platform into place from the end of each 3-foot section. Work on the arch was carried on day and night, in order that the closing section could always be placed before the concrete in the balance of the arch had set.

Electric lighting expedited the night work, and also all the work in the interior of the tunnel, the



TRANSVERSE AND LONGITUDINAL SECTIONS OF THE BURTON GAP TUNNEL.

forms the workmen shoveled it down into the walls, the platforms being always at a level with the top of the forms, or nearly so. In this manner about 100 feet of wall were finished to the full height while the platforms were in one position. Then the flatcars and incline were moved along. The side-wall forms were kept in place not less than forty-eight hours. They had 4x6-inch uprights, spaced three feet apart on centers and reinforced by a 6x6-inch waling attached to the plumb posts of the timber lining, with log bolts extending through the concrete wall. To the timbering at the top they were attached by means of short pieces of plank and lagged with 2x12-inch plank dressed one side.

The arch construction presented little difficulty to the resourceful engineer. The platforms on the two flatcars were raised until the Koppel cars when in a dumping position would just comfortably clear the arch forms. As in the case of the side walls, work on the arch was started at the end most remote from the mixing-plant. The arch forms had 6x12-inch ribs, cut to conform with the curve of the arch intrados and carried at each end on a horizontal 6x12-inch timber resting on 6x6-inch posts erected against the side walls already completed. A 6x6-inch waling timber was also placed along the foot of the ribs on

contractors having installed a plant of their own for this purpose. The absence of cross braces in the tunnel was also a happy circumstance, aiding the swift progress made possible by Mr. Cullen's ingenious arrangements. J. B. Anderson was the engineer in charge for the railroad company.

Permanent Exposition in New York.

The Concrete Association of America has been formed by a number of leading concerns interested in the promotion of concrete construction who recognize the educational value of exhibits designed to show the best practice in the modern uses of cement. Headquarters are to be established in the Brunswick Building, in the heart of New York's retail district, in charge of a well-qualified secretary, who will receive visitors and see to it that they obtain such information as they require with regard to concrete or any of the details about materials or equipment in this line. The exhibits will be selected so as to show for the study of visitors every type of material in all of the uses to which it is applicable. Some articles made of cement that will be included promise to be eye-openers even to those who are well versed in some branches.



DIAGRAM SHOWING STRATIFICATION ENCOUNTERED IN CUTTING THE BURTON GAP TUNNEL.

(Greatly exaggerated as to elevation, the height of this illustration representing only 26 feet, while the width represents the full length of the tunnel, 2,200 feet.)



THE KANSAS CITY VIADUCT.

The Largest Structure of Its Kind in the World. A Notable Example of Up-To-Date Concrete Engineering.

KANSAS CITY, MO., October 15.—What is known here as the Sixth Street Viaduct, the Inter-City Viaduct, or, simply, as "The Viaduct," connecting the two Kansas Cities—Kansas City, Missouri, and Kansas City, Kansas—is the longest street viaduct in the United States, if not in the world. It not only makes a Greater Kansas City possible, but its successful planning and construction constitute one of the notable engineering feats of recent times.

The first spadeful of earth on the new construction was turned August 9, 1905. Work on the substructure, which consisted of three concrete piers in the Kaw River and 322 concrete pedestals averaging 45 feet apart, was rushed with such success that on February 12, 1906, the first steel column of the superstructure was erected in the main viaduct just west of the Kansas City Suburban Belt Railway tracks. The bridge across the Kaw River was erected during the months of March and April, 1906.

The main portion of the Sixth Street viaduct extends from Sixth and Bluff Streets, Kansas City, Mo., to Fourth Street and Minnesota Avenue, Kansas City, Kan., a distance of 8,400 feet. It consists of a double track street railway and an asphalt roadway for vehicles, supported on parallel girders which are spaced 33 feet apart and attached to steel columns resting on cement pedestals. The street railway tracks are laid on creosoted ties, and the asphalt roadway on a 6-inch reinforced concrete base. Steel handrails are pro-

vided on each side of the roadway. From Bluff Street to a point near Mulberry Street the roadway is 38 feet wide, and from this point to the west end it is 30 feet, with an approach at each end widening out. The total width of the structure is 60 feet 7 inches from the east end of Mulberry Street and 52 feet 7½ inches for the rest of the distance. The height above the established grade, to which the ground beneath the viaduct will be filled, varies from 30 feet 6 inches to 50 feet 6 inches, to the surface of the pavement.

The substructure of the viaduct consists of three large piers at the Kaw River, one abutment and 322 pedestals. Of these pedestals, eight are based on rock, forty-two on clay, and 272 are supported on piles. Both concrete and creosoted piles were used, nearly all of which were driven by the use of water jets, and practically all of them either reached rock or a bed of gravel underlying a portion of the structure. There are 798 concrete piles, totaling 23,950 lineal feet, and 2,573 creosoted piles. The total number of piles is 3,371, being 131,000 lineal feet, or about 25 miles, as delivered at the site, and 117,750 feet, or about 22.3 miles in place. The pedestals vary in height from 17 feet to 24 feet on different parts of the work, and there are 13,922 cubic yards of concrete in all. For fastening down the steel to these pedestals, 36,500 pounds of anchor bolts, 8 feet long and 2 inches in diameter, were used. Nine of these pedestals were built under the building of the Kansas City Hay Press Company, and two under the tracks of the Kansas City Belt Line Railway. Pedestals supporting the girders at the east end are situated about the center of Bluff Street and make the structure entirely independent of the large retaining-wall on the west side of this street. At the west end of the viaduct is a fill 70 feet wide at the top and containing 24,000 cubic yards of material.

The piers of the Kaw River bridge are founded on rock, two of which were sunk by the pneumatic process, and the other built by open excavation. The east

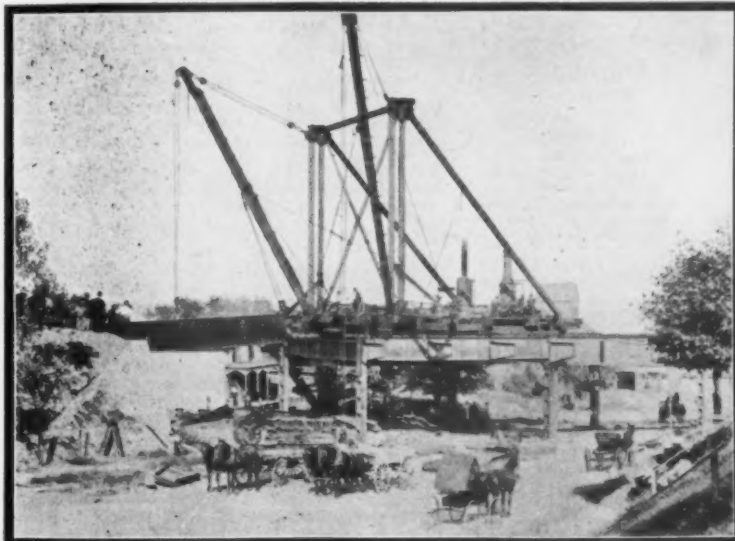
pier is 99 feet from the lowest to highest point. The channel pier is about 92 feet, but very large, the base being 22 feet by 56 feet and the top of the coping 13 feet by 48 feet. This is the largest pier in the Kaw River. These piers were constructed very rapidly, one of the pneumatic caissons being sunk in four weeks and the other in five weeks. In the three piers are 6,415 cubic yards of concrete.

The total length of the steel work is 8,019 lineal feet, and there are 325 girders; the largest is 108 feet long and 10 feet deep. The greatest portion of the structure is built of 45-foot girders with 30-foot tower span at intervals of 34½ feet. The first column of the viaduct was put in place February 12, 1906, and the last girder was erected December 18, 1906. The Kaw River bridge consists of two 300-foot riveted pick truss spans, and the two spans weigh 3,580,000 pounds. The main viaduct, exclusive of the Kaw River span, weighs 20,370,000 pounds. The total weight of the whole structure is 23,950,000 pounds, which was erected at the rate of 1,200 tons per month.

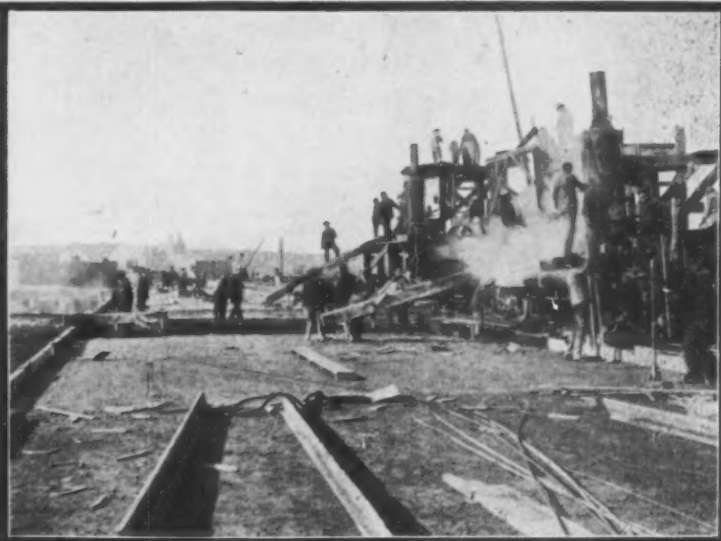
The viaduct has an elevator at Ninth and Mulberry Streets to lift wagons. This will raise 12 to 15 tons 40 feet.

Following are the specifications under which the great viaduct was constructed; covering stresses, thrusts, minimum and maximum live load equations, and the details of reinforcement:

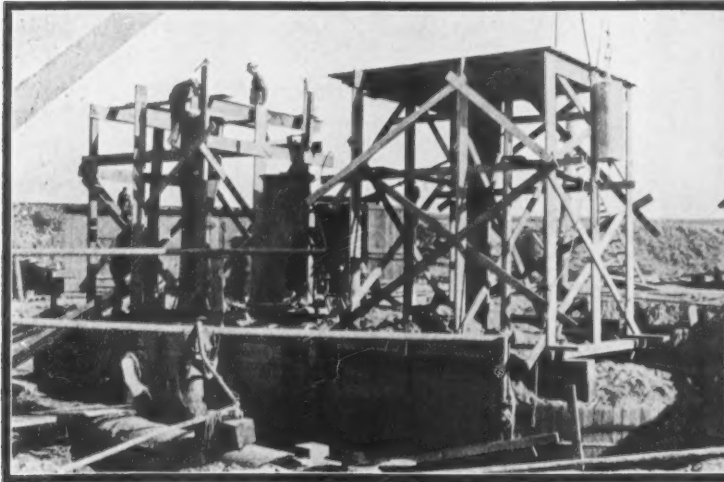
STRESSES.	
<i>Tension:</i>	
On shapes in bottom chords main diagonals and laterals	18,000 pounds
On wet section of plate girder flanges (assuming ½ of the web area to act as flange), on extreme fibre of rolled I-beams	14,000 pounds
<i>Compression:</i>	
Top chords	18,000-70 ¹ / ₈
Inclined end posts	18,000-80 ¹ / ₈
On all other struts with fixed ends	18,000-60 ¹ / ₈
On all other struts with one or two hinged ends	16,000-80 ¹ / ₈
On end stiffeners of plate girders	14,000
<i>Bearing:</i>	
Pins	22,000
Rivets	120,000



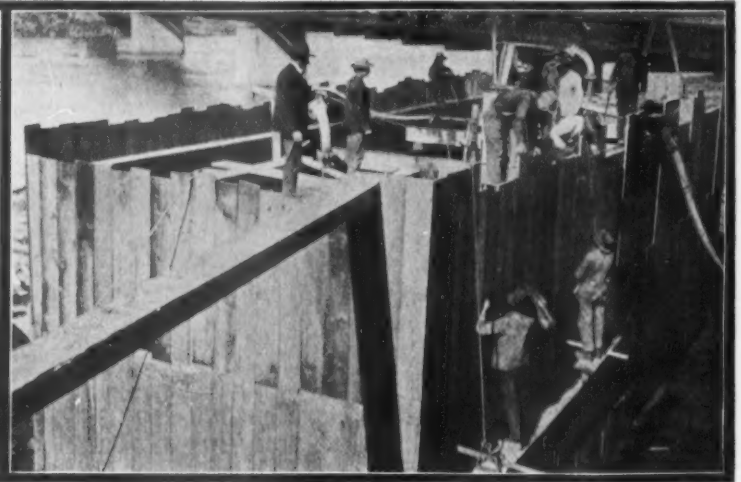
ERECTION AT WEST END, SEPTEMBER 16, 1906.



THE MEETING OF THE TWO CONCRETE GANGS. CONSTRUCTING GREATER KANSAS CITY'S VIADUCT.



Preparing to Seal Caisson No. 1, November 15, 1905.



Building Caisson for Pier No. 1, October 11, 1905.

CONSTRUCTING GREATER KANSAS CITY'S VIADUCT. II.

Shear:	
Pins.....	15,000
Rivets.....	10,000
Plate girder webs.....	10,000
Bending:	
Pins.....	27,000
Bearing:	
On rollers, fixed ends.....	600d lb. per
(d=diam. of roller).....	lineal inch.
On Portland cement concrete.....	
20% of street railway load.....	
Impact Loads:	
Street Railway.....	10,000
L+150.....	
Highway.....	40,000
L+500.....	

The reinforced concrete floor on the roadway is shown on the accompanying reproduction of the blueprint plan. The floor was designed to carry Cooper's Class A, highway loading.

The stone used for the concrete in floor and curbing was principally of Joplin flint or what are known as "chat." Some local limestone was also used.

The sand for concrete was coarse Kaw River. The Portland cement used in the construction of the viaduct came from Kansas, the Iowa and the new brand of the Kansas City Portland Cement Company being used.

There are about 40,000 square yards of reinforced concrete floor.

The viaduct was built by the Kansas City Viaduct and Terminal Railway Company at a cost of \$3,000,000. It is a toll bridge, and the company operating it is capitalized at \$3,500,000.

The Men "Behind the Gun."

W. J. Knepp, who at the time the plan of the viaduct was being agitated, was an alderman of Kansas City, was a leading promoter of the enterprise. The contractors were:

Steel work—Riter-Conley Manufacturing Company, Pittsburgh, Pa.; J. P. Wagner engineer.

Substructure—James F. Halpin and H. C. Lindsly & Sons.

Concrete Roadway Base—Expanded Metal and Corrugated Bar Company, St. Louis; Geo. R. Heckle superintendent.

Asphalt Roadway Surface—The Parker-Washington Paving Company.

Electric Lighting—The Squire Electric Company.

Track Laying—H. C. Lindsly & Son.

Painting—The Goheen Manufacturing Company; Mr. Schepler inspector.

Waddell & Hedrick were originally the consulting engineers for the work, but upon the dissolution of that firm the work was turned over to Ira G. Hedrick, consulting engineer, 309 Keith & Perry Building, Kansas City, Mo., who is also now president of the Viaduct Company.

Many accounts have been published of the construction of this great work, all of them more or less inaccurate. The above is the first authentic summary of the engineering details. It was prepared especially for ROCK PRODUCTS, and all the figures and data have been verified by the consulting engineer.

Concrete Stone Company Organized.

SUPERIOR, WIS., Oct. 14.—T. J. Roth, Henry Husby and W. R. Fanning have just organized a \$40,000 company for the manufacture of concrete stone under the American Hydraulic Company's system. One machine will be installed at present with a capacity of 12,000 stones, 10,000 brick or 500 paving blocks per day, as the case may be. The capacity of the plant will be tripled by the installation of two more machines in the spring.

EXPOSITION OF CEMENT PRODUCTS.

The Chicago Coliseum to Be the Scene of the Greatest Educational Demonstration in the History of the Industry.

For five days, from December 17 to December 21, 1907, the great Chicago Coliseum will be the scene of the most interesting special-industry demonstration in the history of the West—the Cement Exposition under the auspices of the Cement Products Exhibition Company. This is a permanent organization which has just come into being—the outgrowth indirectly of a spontaneous demand from users of cement and directly of the combined efforts of the great cement companies represented in Chicago, all of whom are backing the enterprise and thus insuring its complete success. The organization committee, consisting of William Dickinson of the Marquette Cement Manufacturing Company, J. U. C. McDaniel of the Chicago Portland Cement Company and B. F. Affleck of the Universal Portland Cement Company, have completed their labors, and officers and directors will be elected at a meeting to be held on the 24th inst., all the stock having been taken up. L. L. Fest, who has had charge of most of the great industrial expositions held in the Coliseum, and who has been uniformly successful in his undertakings, will have the general direction of this enterprise and has already commenced work.

The educational advantages of this exposition cannot be overestimated. Every possible use of cement will be illustrated so that it can be studied beneficially by every user of cement. The lively interest already manifested by prospective exhibitors assures a completeness of representation which will make this exposition a complete education in what is without the shadow of a doubt the most important industry of the twentieth century.

Some idea of the wide scope of the Cement Exposition may be had from the following outline showing the departments into which the various branches of the industry have been arranged:

Concrete Mixers.—This will include exhibits of all the many machines on the market, which will be shown at work.

Block Machines.—One of the most interesting departments, as the machines will be in operation, showing the novice as well as the expert what can be done with the many faces.

Brick Machines.—The manufacturers of this class of machinery, which has shown great improvement during the year, will make a great display.

Cement Pipe Machines.—A number of companies will provide a creditable display in this department.

Cement Tile Machines.—This exhibit will reveal some of the more artistic forms for which cement is adapted.

Cement Post Machines.—This will include machinery for making fence-posts, hitching-posts, telephone and telegraph poles.

Reinforcing Metal.—In the matter of instruction, this department will be an education in itself, as the demand for knowledge about the various systems is universal. It is expected that every company will be represented in this exhibit.

Cement Publications.—All the publications devoted to the industry will be invited to take space for booths.

Books.—A department for cement literature will be provided, where the books dealing with the problems of construction will be available.

Schools.—Institutions like Armour Institute the Lewis Institute, the University of Illinois, the one State institution in Illinois of which every citizen may be justly proud, the University of Wisconsin, Purdue, Rose Polytechnic and the University of Chicago have been invited to show exhibits of the work they are doing, and there is every assurance that they will respond promptly and heartily.

Reinforcing Contractors.—Leading contractors in this field, who have been making such wonderful strides in improved methods of construction, will show models, forms, and other features that will be immensely instructive.

Concrete Block Contractors.—The big concerns that make a business of furnishing blocks for construction will have exhibits of their machinery and products.

Architecture.—Here will be one of the valuable features for the home builder, consisting of a display of original designs adapted to block construction and to monolithic work.

Testing Machinery.—The manufacturers of the great machines that scientifically test beams and pillars in the laboratories will show the machines, and tests will probably be made daily.

Testing Laboratory.—One of the interesting features will be a laboratory fully equipped and in operation.

Railroad Displays.—The railroads that have been experimenting successfully with cement have been asked to make displays, among them the Alton, which has successfully used the concrete tie; the Pennsylvania, which has experimented with the cement telegraph pole, and the Burlington, which has used concrete beams in its elevated viaducts in Chicago.

Sheet Piling.—The companies making the steel sheet piling will be asked to show their product.

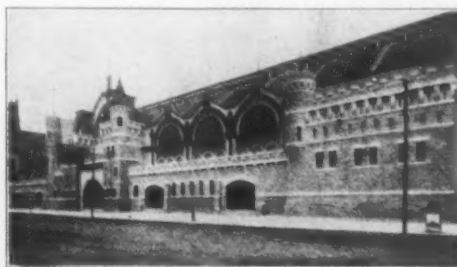
Forms.—This exhibit will be most interesting and of special educational value to all who visit the show. Forms will be set up ready for the placing of concrete and fully explained by experts.

Aggregates.—This department will include limestone screenings, crushed stone and gravel.

Sand.—Here will be shown the various kinds of sand, and their adaptability to various kinds of work will be explained.

A diagram of the floor space will be ready when this number of ROCK PRODUCTS goes to press and will be sent to intending exhibitors on request. The headquarters of the Cement Products Exhibition Company are the New Southern Hotel, Michigan Boulevard and Thirteenth Street, and all inquiries directed there will be promptly answered.

The time chosen for the exposition is particularly felicitous. With the Buffalo event coming the next month it will mean for 1908 the best send-off the industry has ever had. The Chicago event, coming just before the holidays, will also afford visitors an unexcelled opportunity for Christmas shopping. The general arrangements leave nothing to be desired. The mammoth Coliseum will be beautifully decorated for the occasion, and the music provided will be the best. Readers of ROCK PRODUCTS are urged to make their arrangements early so that nothing may interfere with this grand opportunity to study the cement and concrete industries in all their branches and at the same time visit Chicago in all its winter glory.



THE COLISEUM, CHICAGO.

Concrete.

National Cement Users' Convention.

The fourth annual convention of the National Association of Cement Users will open January 20, at 10 o'clock in the morning, and will close at 11 o'clock p. m., January 25, 1908, in the old Sixty-fifth Regiment Armory, Broadway and Potter Streets, Buffalo, N. Y.

This tells the story to every person who attended the third annual convention of the association held in Chicago in January last. For the benefit of the architect, the contractor, the cement block maker and each and every one who has to do with the use of cement, concrete and reinforced concrete in its many forms, the following will be of interest.

The headquarters of the convention will be at the Iroquois Hotel. There will be no advance in the regular hotel rates during the convention. A list of additional hotels and their rates will be published in a subsequent issue of *ROCK PRODUCTS*.

The facilities afforded are better than have heretofore been provided. The unusual interest manifested and the unprecedented applications for space indicate that the fourth annual convention will be far above all previous conventions.

Arrangements will be made for the usual one and one-third fare rates for the round trip.

The assignments of exhibit space for those making application before 12 o'clock, noon, November 16, 1907, will be drawn by lot. The exhibit building will be open for the installation of exhibits on or prior to January 17, and all exhibits must be in place by 10 o'clock, January 20, 1908. Each exhibitor will be allowed passes for necessary attendance, and a limited number of complimentary tickets will be issued. A general admission fee of 25 cents will be charged to persons not exhibitors or members of the association.

Following our reference of last month to the importance of this meeting and its bearing on the cement industry as a whole, we again quote the necessary qualifications for membership, viz.:

"Any company, firm or individual engaged in the construction or the maintenance of work in which cement is used, or qualified by business relations or practical experience to co-operate in the purposes of this association, or engaged in the manufacture or sale of machinery or supplies for cement users, or who has attained eminence in the field of engineering, architecture or applied science, is eligible for membership."

Philadelphia Regulations.

As a result of the collapse of the Bridgeman Building, several months ago, the city authorities have adopted a set of rigid regulations governing work upon such structures for the use of the department of Public Safety.

Director Clay, on October 9, approved the finding of Chief Edwin Clark of the Bureau of Building Inspection and a committee of the Engineers' Club, consisting of Emil Perrot, of the firm of Ballinger & Perrot; Henry Quimby, bridge engineer of the Bureau of Surveys; Professor Walter Loring Webb; Charles Mills, engineer of the Rapid Transit Company and Richard Develin, of the Pennsylvania Railroad Company, who compiled the rules.

In the regulations the Bureau of Building Inspection is vested with practically absolute power over builders of this class of structures. As soon as the Councils make the necessary appropriations, Director Clay will appoint an engineer to the Bureau of Building Inspection whose only duty will be the inspection of reinforced concrete buildings. The regulations provide that reinforced concrete "shall be understood to mean an approved concrete mixture reinforced by steel or iron of any shape, so that the steel or iron will take up all the tensional stresses and assist in the resistance to compression and shear. A competent foreman must superintend the work. It may be used for fireproof buildings of the first class, provided the aggregate be clean broken hardstone, or clean graded gravel, together with clean siliceous sand or fine-grained gravel.

For flooring between rolled steel beams, clean surface clinkers, free of combustible matter, or suitable seasoned furnace slag may be used; stone used with sand gravel must be of a size to pass through a 1-

inch ring, and 25 per cent of the whole must not be more than one-half the maximum size.

The minimum thickness of concrete surrounding reinforcing members of concrete beams and girders shall be two inches on the bottom and one and one-half inches on the sides of the beams and girders. The minimum thickness of concrete under slab rods shall be one inch, and all reinforcement in columns to have a minimum protection of two inches of concrete.

Exposed metal will not be considered a factor in the strength of any concrete structure. A plaster finish over metal must be of officially approved thickness and properly secured.

All concrete shall be mixed in a mechanical batch mixer to be approved by the Bureau of Building Inspection, except when limited quantities are required or when the condition of the work makes hand-mixing preferable; hand-mixing to be done only when approved by the Bureau of Building Inspection.

In hand-mixing the cement and fine gravel or coarse sand shall be first thoroughly mixed dry and then made into a mortar by gradually adding the proper amount of water. The crushed stone or gravel shall be spread out to a depth not to exceed six inches, in a tight box or upon a proper floor, be sprinkled with water, the mortar then to be evenly spread over and the whole mass turned over a sufficient number of times to effect the thorough mixing of the ingredients. Only Portland cement may be used. It must be tested in carload lots or in quantities equal to same, and report filed with the Bureau of Building Inspection before its use.

In the testing, pats of neat cement will be allowed to harden twenty-four hours in moist air, and then be submitted to the accelerated test as follows: a pat is exposed in an atmosphere of steam, above boiling water, in a loosely closed vessel, for three hours, after which, before the pat cools, it is placed in boiling water for five hours.

The contractor must be prepared to make load tests in any portion of a reinforced concrete building within a reasonable time after erection, and as often as may be required. The tests must show that the construction will sustain a load equal to twice the calculated live load without signs of cracks.

Need of Organization in the South.

ATLANTA, GA., Oct. 18.—Several rumors regarding a proposed organization in the South of concrete contractors and manufacturers of cement building materials into a permanent association have been without support for the reason that the engineering and contracting interests leading in the industry have not been able to cooperate in any such movement. An ambiguous invitation was published in an Atlanta trade paper in September looking to this end, but it failed to reach the principal concerns in the South whose support of such an organization must be depended upon if success is to be expected. Letters to this effect have been received by *ROCK PRODUCTS* from various important points in the South, from leading concrete engineers, contractors and manufacturers. Under proper guidance and with intelligent effort a Southern Association of Cement Users could be organized which would redound to the good of the industry, but it is necessary for the movement to have for its principal object the advancement of the prosperity of the men engaged in the concrete industry of the South, and not solely the promotion of somebody's scheme to make money out of the supply and equipment people who may take advantage of the advertising opportunities of such an occasion. The right people will support the right kind of an association in the South, but permanently they will give little of their participation in anything that looks like a "scheme." Honesty of purpose is the first essential in the South, for any public movement.

The management of an Atlanta trade paper today assembled a number of gentlemen at the Piedmont Hotel, read to them a previously prepared constitution and recommended that they adopt same and in this way launch the Southern Cement Users' Association. There was little or no objection to this, because nearly all of those present were only interested in supplying materials for concrete work of all kinds, without any definite knowledge of the needs of the case. The explanations of the promoters were accepted for the most part without comment.

Before adjournment the following officers consented to be elected: J. Louis Houle, president, Atlanta, Ga.; C. E. Chambers, vice-president, Selma, Ala.; Dr. O. B. Webster, second vice-president, Deland, Fla.; A. E. Manierre, third vice-president, Nashville, Tenn.; and W. H. Wilson, secretary-treasurer, Atlanta, Ga. The officers are to constitute the Board of Directors, who will appoint vice-presidents later for all of the different Southern

States—at least the secretary will, as soon as he secures the name and address of an available man in each State.

The next issue of the Atlanta paper will contain a wonderful report of the enthusiasm (?) of the organizing convention, and a great pretense of what the campaign of the association is to be, but the fact is that a few substantial supply people were persuaded to assist in a friendly way what was represented to them to be a progressive movement of the leading interests of their section, when really this was not the case. A *ROCK PRODUCTS* staff man on the ground could not discover anything that looked like enthusiasm.

This is written without malice in the hope that it will spur the promoters of this attempt into really doing something for the industry in their own section, without pretense or misrepresentation.

Build Their Own Machines.

KANSAS CITY, Mo., Sept. 29.—When a conscientious and experienced cement man goes into the business of manufacturing cement stone work (cement, not artificial stone, that term being a misnomer), he never fails to do good work. Now and then an inexperienced man, by carefully conforming to the formula, will turn out good work if he has a good machine and uses good materials.

In examining the concrete blocks made by the Walton Granolithic Stone Company at their plant at the corner of Eighteenth Street and Wabash Avenue, I was impressed by the merit of the principle embodied in their machine, which is controlled by the Walton Stone Machine Company, E. M. Walton president, the same gentlemen who is president of the Walton Granolithic Stone Company. It is known as the two-piece wall system, which makes dry walls without requiring the expense of furring plastering or waterproof washes. The principle referred to is that of an "L" block which does not meet its mate by one-quarter of an inch, thus preventing the conducting of dampness by capillary attraction, and this is further guarded against by regulating the proportion of air space. I learned they discontinued the use of a machine costing \$1,100 when their own machine was built, and since it was put on the market it has been sold all over the country. Mr. Walton told me he had been engaged in concrete work for fifteen years. The office of the company is a concrete block structure, and in making blocks the Kansas City Portland Cement Company's cement is used. Mr. Walton is a good talker and full of information on cement and kindred topics.

Doing a Good Jobbing Business.

ST. JOSEPH, Mo., Sept. 30.—Several parties having called my attention to the Central Stone Company, whose concrete block making establishment is situated on the corner of Twenty-sixth and Mesanite Streets, I took occasion to pay the plant a visit. It is a fine concrete block building 54 by 122 feet and is of itself a good advertisement of this class of building material. I met T. M. Hunter, manager, and after I had talked with him a while I discovered I was conversing with a man who was thoroughly posted in his line of work, though Mr. Hunter evidently has both sense and modesty, since he is constantly seeking to learn "the reason why" of things. It is little wonder, however, that a man who has spent over twenty-five years of his life in the practical work of superintending cement jobs, should have the right kind of knowledge, and this each one who hopes to make a success of concrete work must acquire for himself.

Mr. Hunter said they had three Walton, two Wingate and one Favorite brick machines. They also use a continuous automatic mixer, which they rigged themselves. They use Red Ring brand of Portland cement exclusively. In the manufacture of blocks they make them as wet as possible, and after they are made they continue to apply water and let the blocks season out in the open air. In shipping, they load the oldest stock and keep on in rotation, each alley having its date of manufacture. Mr. Hunter said properly made blocks need no waterproofing and there is no occasion for furring for plaster. It is very important to use the right kind of sand; only sharp, coarse sand of granite origin is fit for block-making. As to the proportions, that is an affair even the novice may learn, but great care must be exercised to secure uniformity. Mr. Hunter informed me they had just shipped five carloads of blocks to a neighboring city and that considerable of their business came from outside of St. Joe. One of their recent jobs was the Mount Auburn Cemetery entranceway and office. Trunk & Heim were the architects.

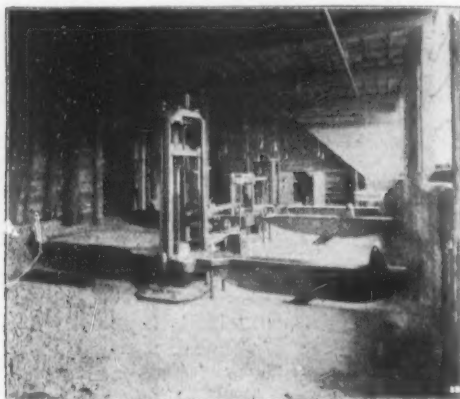
INTERESTING CONCRETE TESTS.

Important Work of the Government Laboratory at St. Louis.

Perhaps the most instructive feature of the Chicago Convention of the National Cement Users' Association last January was the talk of President Richard L. Humphrey upon the testing of building materials in progress at the St. Louis laboratory under his personal direction as engineer in charge. The talk or informal lecture was illustrated at that time by stereopticon views, and a detailed report with descriptions appeared in ROCK PRODUCTS for February.

Under the auspices of the Structural Materials Division of the United States Geological Survey Mr. Humphrey has written the report in detail and provided photographs to illustrate the mechanism employed in applying the tests to all kinds of concrete structural material. This kind of research must proceed but slowly, because the examination of sands, gravels, broken stone and all other materials that enter into the aggregate or inert part of the concrete mass had to be exhaustively undertaken and completed before actual work with cement could begin.

There was no constant in the calculation except Portland cement, which, though the most important, constitutes the smallest part by weight of any concrete formula. The selection of a standard of comparison for the various substances commonly used

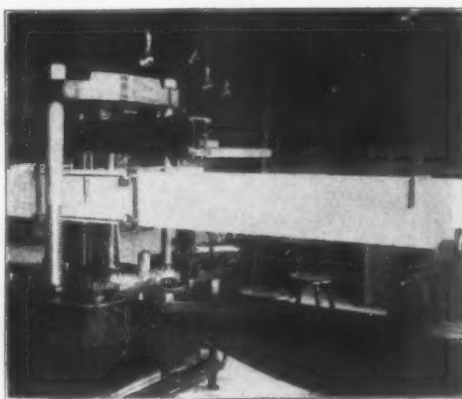


THREE CONCRETE-BEAM TESTING-MACHINES.

in making up the concrete aggregate offered a problem requiring no little research and experimentation. Beyond this first foundation for the intelligent study of the science and practice of concrete engineering the work branches out into the various lines with little difficulty, though here the details of the gigantic undertaking really begin.

Naturally this work will stretch over a number of years of diligent and exacting study by devoted experts before we can positively know all the values that must be determined by approved comparisons so that true standards can be established for future practice. In view of this vast scope of the undertaking, really wonderful progress has been made in the comparatively few months of actual work. Too much credit cannot be given to Mr. Humphrey as an engineer for getting anything approaching practical working results in so short a time, especially when we consider that at the start he had to begin by creating definitions, or, rather, confining the meaning of common terms to the use of the study.

A committee called the joint committee on concrete and reinforced concrete was invited to assist in outlining the work at the laboratories. This committee is composed of members of the American Society of Civil Engineers, the American Society for Testing Materials, the American Railway Engineering and Maintenance of Way Association and the Association of American Portland Cement Manufacturers. The leading professors of engineering from almost all of the large colleges in the country are members of this committee, and they exercise general supervision over the work. An advisory board com-



TESTING A THIRTEEN-FOOT CONCRETE BEAM.

posed of leading engineers throughout the country was also created and has had general supervision of the work.

The report of the work already accomplished, written by Richard L. Humphrey, engineer in charge, follows:

Tests are being carried on to determine the value of different sands, stones and other materials used in the manufacture of concrete. The material is shipped from all parts of the country by geologists connected with the work and a complete record of the material is sent in by them. At the laboratories this material is made into mortar and concrete by using the different percentages ordinarily employed in practical work and following as closely as possible practical conditions.

In addition to the study of the constituent materials of mortars and concretes, structures of various kinds similar to those used in buildings are made and tested.

The equipment of the laboratories at St. Louis for carrying on this work is very complete. In addition to all needed smaller apparatus there are four testing machines of 200,000 pound capacity and one of 100,000 pound capacity, suitable for testing beams and other structures used in buildings. These machines will test beams up to twenty feet in length and are equipped to make tests of the different materials used in construction work. Three of these machines used in the beam division are shown in Fig. 1.

In addition to the above machines a very large machine, having a working capacity of 600,000 pounds, will in a few weeks be installed at the laboratories in St. Louis. As far as known at this time there is only one other machine in the United States similar to this. This machine will make it possible to test columns, beams and in fact all the different kinds of construction material now used. It will test very large reinforced concrete girders up to spans thirty feet in length and concrete columns up to thirty feet in length.

The value of such tests as these is readily apparent, since their results can be applied directly to practical work. A very serious objection to the use of results obtained in tests made by private investigators is due to the fact that the tests were applied only to small specimens not nearly approaching in size the parts or pieces used in actual construction. Heretofore it has been necessary to consult the results of these small tests in order to have some basis for design, but it is now clearly recognized that the best results can be obtained only from tests made on members as large as possible, or at least on pieces as large as those ordinarily used in structural work.

All the concrete used in the laboratories is mixed in three Chicago cube concrete mixers, each of which is mounted on skids, geared to a motor and equipped with charging hopper. One of these mixers has a capacity of one cubic yard and the others will contain one-third cubic yard each. After the concrete is mixed it is carefully tamped in molds to form the different pieces on which the tests are made, such as cylinders, cubes, and beams.

The laboratory also uses five hollow concrete block machines, used for making concrete blocks similar to those used in actual construction, and the several different divisions—the constituent materials division, the beam division, the concrete block division, the permeability, the shear and tension and the chemical division are equipped with all apparatus necessary for conducting their tests.



STORAGE ROOM FOR CONCRETE BEAMS.

Although reinforced concrete is used to a remarkable extent at the present time, and both concrete and reinforced concrete construction is becoming more and more popular every day, it is evident to anyone familiar with construction work that these materials will be more generally employed within the next few years. Many engineers are prejudiced against the use of concrete and reinforced concrete, but this prejudice is rapidly being removed by the obtaining and publication of reliable data regarding this material. Without doubt, in a very few years, when most of the principles underlying the use of concrete and reinforced concrete have been fully established from tests and investigations, there will be little prejudice against the use of concrete, the present prejudice evidently being due to lack of information.

The longest beam thus far tested in the beam division has been thirteen feet in length. Beams of this length tested are made without steel, that is, of solid concrete beams, and also with varying proportions of steel, ranging from very small percentages up to three per cent. A full size beam in the testing-machine is shown in Fig. 2; the load is applied at the top of the beam at points four feet from each end. The men conducting the tests watch the beam very closely while it is in the testing machine, and examine its surfaces with magnifying glasses in order to locate the fine cracks as they appear. In the beginning a load of about 5,000 pounds is applied and the machine is stopped with this load on the beam. After the observers have examined the beam carefully and made a record of the cracks appearing at that time, the load is increased, and after every 1,000 pounds additional the beam is again examined until the maximum load is applied.

In a very large number of tests the beam shows no cracks that are visible to the eye until the maximum load is reached, when the steel reaches its elastic limit and begins to stretch fast, this result ending the test. The cracks that appeared on the beam and the loads at which these cracks appeared are recorded by photographs.

In beginning tests of reinforced concrete simple round rods were used, as it was thought that more uniform results could thus be had than if any of the patented systems were used. After a complete series of tests with the round rods has been made, it is proposed to take up tests with the different forms of bars that are used in practical work, and the results will be published from time to time by the Geological Survey. Tests will



CEMENT BLOCK MACHINE.

be made of beams ranging from six to twelve feet in length, and because of longer span will be tested later, if necessary, in order to get results that can be applied to almost all practical conditions.

The concrete used in the different beams tested, as described above, is molded into cylinders and cubes, which are tested in order to get the direct strength of the concrete. These cylinders and cubes are all tested at different ages, generally at ages of 7, 28, 90, 180 and 360 days. The cement, sand, stone, gravel, or other material composing the concrete is carefully proportioned by weight, the correct percentage of water is used and the whole mass is placed in a mixer and thoroughly mixed. It is then deposited very carefully in molds or forms which after twenty-four hours are removed. The concrete is then moved into a storage room, shown in Fig. 3, and is there sprinkled with water three times a day. Each test piece is numbered on a card index, which tells where information relating to the test pieces can be found and also indicates the dates on which the different pieces are to be tested.

A branch of the work that should be of interest to everybody, especially the small home-builder, is the investigation of cement building-blocks. Many houses are now built of cement blocks in preference to wood, because generally cement-block construction is cheaper and better than wood, since it is fireproof, more durable and less expensive to maintain. The exterior surfaces of wooden buildings must be painted, and clapboards must be added from time to time; but when the cement-block building is finished, the surface is there once for all; no further treatment, no repairs, no maintenance are necessary.

All the cement blocks used in these investigations are mixed in the concrete block machines shown in Fig. 4. The concrete is mixed in a one-third cubic yard cubical concrete mixer and deposited on the floor of the testing-room. It is then shoveled into the hollow block machines and compacted very firmly in the forms. Varying proportions of concrete, sand and stone are used in order to determine the relative value and economy of using different mixtures. Some blocks are made of wet concrete, others of concrete very dry, and still others of concrete having a consistency medium between wet and dry. In actual practice, concrete blocks made from comparatively dry concrete is usually preferred by the manufacturers, for these blocks harden quickly and the forms may be removed almost as soon as all the concrete is placed in the machine. By this practice it is

Continued on page 50.

UNINTERRUPTED PROGRESS.

Concrete Structural Work in Cleveland Making Wonderful Strides.

Monolithic concrete construction continues to gain immensely in favor in the city of Cleveland. An examination into many of the largest structures erected there during the past season shows that they are entirely or largely of this new building material. There are a number of big construction companies in that city devoting their entire attention to reinforced structural work. Some splendid specimens of the builder's art have come from their hands during

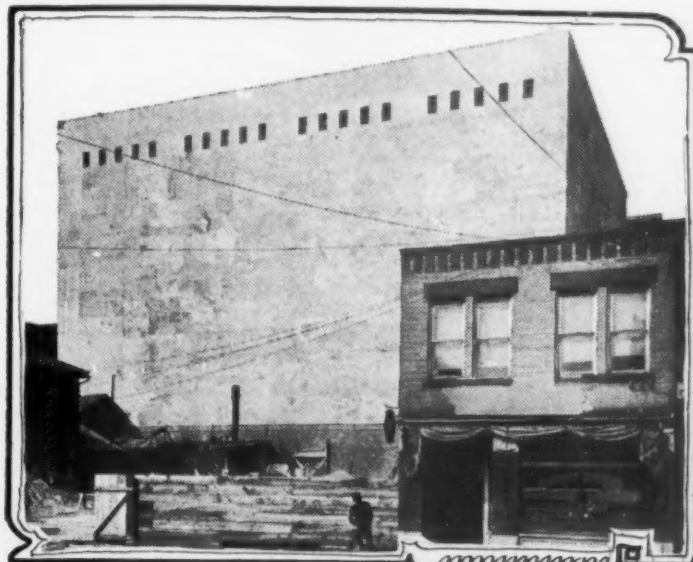
It was erected by the Trussed Concrete Construction Company. The reinforcement is Kahn system of Detroit. The building is eighty feet high—the limit of concrete structures according to code here. It is about 100 feet square. All the interior and wall work is of solid concrete. The exterior walls are of hollow tile plastered with a thick coat of rich cement mortar.

That concrete is an admirable substance of which to construct a factory has been proven over and over again by M. A. Bradley of this city, who has a dozen concrete buildings and has under construction this season no less than six new concrete structures, all of considerable size. One of the biggest jobs finished is that of a fine new factory on West Third Street.

of work this year. At the present time they are building a 1,000-foot concrete dock for the Cleveland Furnace Company. A four-story storage warehouse 60x100 feet is being erected on South One Hundred and fifth Street for E. L. Abby. Three solid concrete parochial school buildings have been erected and a fourth for the congregation of the Sacred Heart of Mary has been started. It will cost about \$60,000. A concrete school for St. Stanislaus Parish is rapidly nearing completion.

For the first time in the history of the city the school architect has permitted the use of reinforced concrete for the interior of a school. The contract for the new Millford School has been let to the Carey Company, thereby saving a matter of fifteen per cent to the city. Concrete blocks have been used extensively, but this is the first time that monolithic concrete has entered to any extent into the schools.

One of the largest jobs of the year is now up to



NEW STORAGE HOUSE.



REINFORCED APARTMENT BUILDING.

the past season, with more to come.

The buildings are not devoted to one type, but are of a wide range. Factories, refrigerating plants, handsome apartment-houses, dwellings and business blocks are among the styles cast in concrete. Apart from some monumental banks and public buildings of granite, the biggest jobs in Cleveland have all been of concrete.

One reason why success has attended its use is because the new building code is very strict in regard to it. This is welcomed by honest contractors; it is a horror to the dishonest ones. Under a careful staff of assistants Cleveland's Building Inspector has seen to it that all structures have been properly built. He has recently ordered the exclusion of cinders as an aggregate in concrete, believing that the material is not of such a nature that it should be used in structural work of any kind.

There has not been a single accident in which anyone was injured or killed during the past year. With the volume of building and the fact that many men were being initiated into the mysteries of cement construction this is a somewhat remarkable record.

One of the biggest concrete apartment-houses in the country is being erected for the Euclid Realty Company at Euclid Avenue and East Sixty-ninth Street. It is four stories high and runs back about 300 feet. With the exceptions of the brick veneer on the walls it is of concrete throughout. It has been built in about six months. The contractor was J. Yobe of Canton, O. The suites in this apartment will rent from \$50 to \$75 a month. It cost from thirty to forty per cent less than if built of brick, steel or stone.

The Sheriff Street Market Company's new cold storage warehouse is an interesting piece of work.



FIREPROOF FACTORY FOR M. A. BRADLEY, CLEVELAND, O.

It is about 150 feet square and five stories high. The outer walls are concrete veneered with brick. Bradley has another building going up on West Third Street, 60x120 feet, four stories high; one on High Avenue, 100x80 feet, four stories; one on Mandrake Avenue and West Ninth Street, 70x120 feet, three stories, and another just let on West Third Street, 50x150 feet, six stories high. In not a single one of the Bradley buildings has a serious accident occurred or have the buildings shown any noticeable deflection.

That concrete is a splendid substance of which to build chemical laboratories has also been evidenced by its selection by the Western Reserve University of this city for a fine new chemical laboratory. The building will be four stories, 50x60 feet. The Reinforced Concrete Construction Company of this city is erecting it for the college.

The Carey Construction Company is doing a big lot

the second story. It is the new administration building for the White Automobile Company on St. Clair Avenue. It will be six stories high when finished and will contain 140,000 square feet of space. The Reaugh Construction Company hold the contract, which amounts to \$200,000.

The job with the largest ground area is that of the new barn for the Cleveland Transfer Company. The building is only four stories high, but on each floor are 25,000 square feet of space. It is on Oregon Avenue and was built by the Reinforced Concrete Construction Company at a cost of \$150,000. It is the most sanitary barn in America. All the stalls and fixtures are of concrete and cement. They can be flushed out and disinfected at any time. The barn is a wonderful contrast to the former one on Superior Avenue used by the same company from which came such a fearful stench in summer from rotting woodwork that complaints came fast and furious until the company moved into its new quarters. It has taken six months to renovate the old building, and then all the woodwork had to be ripped out.

W. C. Morton of Cleveland is another man who is a firm believer in the value of reinforced concrete construction. He has two buildings under way this season. One is a four-story structure on Euclid Avenue adjoining the Beverly Hotel, and another is at High and Sheriff Streets.

There are at least a score of other big structures which could be mentioned, but these are among the more important. S. W. Emerson of the Building Inspector's department, who has charge of the concrete work being done in Cleveland, declared that the volume of work has increased by forty or fifty per cent this year.

"One cannot realize what the future will bring," says Mr. Emerson. "I look for a wonderful growth in this form of building within the next two or three years and believe that it will eventually replace all other materials to a great extent. Sand and gravel can be found everywhere. The cheapening of cement prices has done much to make concrete popular."

From Our Own Correspondents

THE NORTHWEST.

MINNEAPOLIS, MINN., Oct. 14.—Fall building is slow to get under way. Considerable work is projected, of which doubtless the usual amount will mature in time, but so far it has taken longer than usual for these projects to reach the state of publication and public announcement.

The stock of brick carried over for the late fall, the winter and early spring work is somewhat larger than last fall.

Concrete construction is making for itself an unquestioned place for foundation work, both in blocks and in monolithic construction. Probably half the residences constructed in the medium cost list have concrete foundations. Cement-plastered work is also taking a slight boom, such structures being more frequent than formerly among the newer dwellings.

Concrete has nearly supplanted all other construction for retaining walls, sidewalks and other similar work in the Northwest.

The brickyards at Princeton, Minn., five in number, made about 17,500,000 brick this summer. A large stock will be carried over.

The National Stone Manufacturing Company of Minneapolis are making a stone which they call Granolite, a duplicate in appearance of the Caen stone of Paris, for use in the Strathmore Terrace apartment building. A sample of the French stone was imported and used for comparison.

The partnership of Frank W. Tidball and C. E. Brewster as the Nodamp Concrete Block Machine Company of Minneapolis has been formally dissolved.

The showing of the Twin Cities in building permits for 1907 is quite satisfactory. Minneapolis had a total of \$8,060,665 for three-quarters of the year, a gain of nearly \$450,000 over the same time a year ago. St. Paul has a gain of nearly \$500,000 over the nine months of last year, totaling \$5,841,817. September's permits showed a loss because in September of 1906 a single permit of \$400,000 was taken out, while the month of 1907 had no large permits, but had residences aggregating \$385,000.

The city of Minneapolis is laying some macadam paving with Westrumite dressing in one place and with Tarvia in another, as a test of these preparations.

The Inter-State Pressed Brick Company of St. Paul have recently filed articles of incorporation to engage in the production of pressed brick of cement, etc. The incorporators are outside men—F. T. Day and C. H. Watson of Waseca, Minn., and G. L. Rolfe of Spokane, Wash. The capital stock is \$100,000.

The Keith Company of Minneapolis, architects, have just moved their offices from 917 to 1722 Hennepin Avenue. This company built an office at the former location, and plastered it with cement, and later the members of the firm constructed a handsome concrete hotel building near the new location, which prompted the removal to that vicinity. The new office is also cement-plastered exterior—and has wide overhanging roofs.

G. E. Ingersoll, Northwestern sales agent for the Smith mixer, has sold an outfit of mixers, engines and boilers to L. D. Campbell & Co. of Duluth, Minn. for their extensive contract at Trout Creek, Mont. He has also sold a hog crusher and elevator to the same firm for their work at Vancouver, Wash.

MEMPHIS AND THE SOUTHWEST.

MEMPHIS, TENN., Oct. 16.—The concrete firms in Memphis have a number of small building contracts in hand for the autumn and winter. This character of work is growing in favor here. The growth is not rapid, but it appears certain. Every residence and church and office structure designed here from hydraulic stone blocks has proven a success.

The supply firms indicate that their trade is normal, with prices showing no changes in several weeks. A good deal of cement, lime and other building material is being sold in the city trade and some to neighboring towns.

Steve Wright of the Wright Lime and Cement Company was seen at his place of business on Third

Avenue. Mr. Wright said that the October business was up to the average for this month in the Memphis trade, but out of town business was somewhat quiet.

Representatives of the Southwestern States Portland Cement Company say that the work on their big new plant in West Dallas, Texas, is being pushed with all the haste possible. They are ready to put in a long switch from the Texas and Pacific track to the site of the plant. Construction of the big buildings that will comprise the plant will be begun as soon as the switch is laid.

At Amarillo, Texas, C. T. LeMond and H. R. Potter are now the owners and operators of the cement block and brick works. They purchased the same quite recently and are preparing to give greater capacity to the plant. They expect to be equipped soon to manufacture cement blocks, finishing blocks, flue blocks and cement brick in the largest quantity. They expect to turn out one thousand blocks per day. They now employ thirty men in the plant and in their sand pits.

Hereford & Miers, Rich Hill, Mo., have secured a machine for making concrete blocks and are turning out some nice work for house building and for porches.

The Webb City Granolithic Company of Webb City, Mo., of which C. M. Manker is president and J. C. Harrison secretary, is to enlarge its plant extensively. The extension will be built of granolithic stone and in such a way that other additions can be made from time to time.

The Brookfield Brick Company of Brookfield, Mo., will furnish the brick to be used for the Brown Shoe Factory in that town. The foundation of the building in question will be in concrete work.

Harry Koch, well known salesman in Kansas territory, has gone to Chattanooga, Tenn., where he takes the position of traffic manager for the Dixie Portland cement plant.

V. A. Schnoeblin of Grainfield, Kan., has been doing considerable cement block work this season for residence jobs.

The great cement structure which is to be occupied by Innes & Co., at Wichita, Kan., is now on its sixth story. No structure in the West has ever caused more comment, and the figures on its structural makeup are interesting. The construction is of reinforced concrete from footing to parapet walls, including columns and beams, together with six fireproof floors and roof and the roofs of elevator shafts, as well as the interior walls, interior partitions and area walls and surrounding sidewalks. The basement wall consists of 11-inch reinforced concrete. The cellar floor consists of six inches of concrete and four inches finish on the top, which will make the basement absolutely waterproof and will furnish one of the largest and finest salesrooms in the West. The columns of the basement are 2 feet 2 inches square, reinforced with 1½-inch steel rods, and will withstand with safety the following load: The first floor is constructed for uniform load of 300 pounds per square foot; the second, third, fourth, fifth and sixth floors for uniform loading of 250 pounds per square foot. The floor space, including basement, is 75,000 square feet. The building will be completed by January 1, 1908. In its construction will be used 30,000 sacks of cement, 125 cars of crushed rock and 100 cars of sand.

BUFFALO, N. Y.

BUFFALO, N. Y., Oct. 16.—A request of the National Association of Cement Users for permission to use the old Broadway arsenal at the coming Buffalo convention of that organization was recently considered at the last meeting of the Buffalo Board of Aldermen. A resolution granting the association the use of the building was finally passed.

Superintendent C. J. Phillips of the Lackawanna Railroad has announced his plans for a concrete trestle to be built at East Buffalo. The trestle will be used for fueling engines. The structure will be about 1,000 feet long, of standard height, and will be built entirely of concrete. It will have a capacity of 4,000 tons, and will be the first and largest fueling trestle of its kind in the country. It will be absolutely fireproof. Not a stick of timber will be used anywhere in its construction, and even the stringers upon which the track will be laid will be of concrete. It is expected the new trestle will be complete and in operation within a year. The necessity of the trestle such as the Lackawanna will build may be readily observed when it is noted that no less than 140 of the company's locomotives run in and out of Buffalo every twenty-four hours.

The contract for the construction of the new building of the Akron, N. Y., Sanitarium Company has been awarded to the Akron Artificial Stone and Construction Company. The building will be all concrete ornamental block.

The mill of the United States Gypsum Company at Oakfield, N. Y., was recently destroyed by fire. The loss was \$75,000. It is supposed that the fire started in some way from the naphtha used in mixing with lampblack. Much valuable machinery was destroyed in the mill.

Architect E. L. Davis has prepared plans for a two-story brick building to be built by A. C. Schaller in Schenectady, N. Y. The cost will be \$10,000.

Mosier & Summers have the contract to build a large new freight house in Exchange Street, this city, for the Erie Railroad. The house will be 200 feet long by 32 feet wide and will be of brick construction and fireproof. It will be two stories high, the second story being used for office purposes.

The Clifton Sand, Gravel and Construction Company have bought the lands and plant of the North American Cobalt Refining Company at Thorold, Ont., and have begun the erection of a smelting plant. The company may also engage in the manufacture of brick.

George Schaaf has begun work on the contract to build an addition to the jail in Buffalo at his bid of \$34,500. County Engineer Diehl prepared the plans.

In a recent week permits were issued by the Bureau of Buildings in Buffalo for new buildings and additions that will cost in the aggregate \$139,000. The records of the first nine months of this year in Buffalo exceed those of the corresponding months in all previous years except last year and 1895. From January 1 to September 30 this year the building in Buffalo amounted to \$6,410,400. Last year \$7,148,029 worth of building was done in the same period. It is expected that when the figures for the entire year are known on January 1 the record for 1906 will be surpassed.

LOUISVILLE, KY.

LOUISVILLE, KY., Oct. 15.—In some respects there is more activity in the general building industry in this section of the country, and while there is still some complaint, it is not nearly so loud as it was, and that is a favorable sign. The operators in concrete are quite active, and they will have as much as they can attend to until the arrival of cold weather, so that they will have had, at the end of the season, a very fine year, despite the drawbacks attendant upon the strike.

Few new contracts are being let at this season, but all the concrete operators have had plenty to keep them busy and are satisfied.

The Southern Roofing and Paving Company have plenty of work in concrete to keep a large number of hands at work until the cold weather, and have in addition some large contracts for roofing, including the courthouse in this city. They are delighted with present conditions.

C. A. Monks, the newly-elected secretary and treasurer of the National Roofers' Association, will do much toward increasing the membership of that organization, and under his influence it will continue to thrive and prosper.

The National Concrete Construction Company have as much work as they can possibly take care of during the coming months. They have just received the contract for another substation for the Louisville Light and Power Company.

The Central Concrete Construction Company are not as busy as they would wish, but have some nice orders. They are not looking forward to a very active demand during the next few months.

C. S. Hall & Co. have been quite busy lately and are at present working on the Seelbach Hotel annex. They have done practically all the concrete work on this large structure. They also have other contracts that will keep them busy until winter.

The Louisville Pressed Stone Company have made good headway on their concrete block plant for their own use, and will soon be in a position to move in. They will then be able to handle any amount of work in the block line.

The Fitch-Troxell Company have enough to keep many operators busy, and will have as much as they can do to complete their contracts before the snow flies. Mr. Troxell said that they were as much rushed as they cared to be, and that they were perfectly satisfied with the present condition of the business.

The National Roofing and Supply Company have a fair amount of business and manage to keep a number of operators busy. They have plenty to do in the roofing line and the rush season keeps them on the jump.

S. A. Troxell & Co. are busy in the roofing industry. As this is always a busy time for them, they can be counted among those who have their hands full.

The Western Cement Company report conditions as being about the same with them as last month. The

—
y
e.
re
x
is

a
er

a
y.
et
e
ne

n
th
t.
of

to
of
s.
au
i
ne
f
ll
m
in
29
is
re
ne

re
in
ill
nd
te
ay
so
s
on
ut
ep

ve
of
d.
he
th

s
lo
r
ne

ve
ng
n
ut

ot
rs.
nd

re
x
rk
n

de
ir
n
rk

ep
ey
ow
ed
is

ve
n
he
he

y
be

as
he

dem
hold
the
ness

T
very
whic

J.
thei

bush
has

T
Par
bush
who
trai
Tox
He

T
very
in s

T
even
and

T
they
ern

T
usu
out

A
stre
crea

T
bus
tim
imp
larg

C

and
vol
mu
plic
the

L
ten
and
690
150
ing

C
wa
Co
cor
ner
to
wit

C
tes
ba
ca
to
fo
a

ho
af
by

th
sh
an
fie
no
ma
tic
re
th
wo
th

tic
a
ne
ou
of

m
th
a
S

demand for natural cement is about as usual and is holding its own well. T. A. Courtney, secretary of the company, lost his son on October 10, after an illness of only a few days from appendicitis.

The Kosmos Portland Cement Company are still very busy selling a large amount of their cement, which is proving quite popular here.

J. B. Speed & Co. are still finding the demand for their Portland cement good.

The P. Bannon Sewer Pipe Company have more business than they can conveniently handle and it has been this way throughout the entire year.

The Louisville Fire Brick Works at Highland Park, Ky., are enjoying their usual good volume of business. Mr. Grahn, president of the company, who was seriously injured by being run down by a train some time ago, is improving nicely at Lake Toxaway, N. C., where he was taken to recuperate. He is expected home very soon.

The Southern Brick and Tile Company are still very busy both in drain tile and brick with no let-up in sight.

The Burrell & Walker Sewer Pipe Company, like every other concern in this line, have had a big trade, and still have plenty of unshipped orders.

The Kentucky Vitified Brick Company have all they can do to keep up with the demand from Southern customers.

The Kentucky Wall Plaster Company report the usual activity with them in the demand for their output.

At the Atlas Wall Plaster Company Mr. Armstrong says that their business is showing an increase all the time.

The Ohio River Sand Company have done a big business, even taxing their enlarged capacity at times. Early in the season they put in extensive improvements that practically doubled their already large capacity.

CLEVELAND.

CLEVELAND, O., Oct. 15.—The outlook for the fall and winter season is very bright. There is a large volume of building under way which is engaging much labor and requiring large quantities of supplies. Many of the big buildings erected during the past season will be finished up this winter.

Despite the unusually tight money market September broke the record of a year ago in the volume and value of permits issued. During the last month 690 permits were issued for buildings costing \$874,156. A year ago 645 permits were issued for buildings worth \$871,426.

One of the interesting developments of the month was in connection with the construction of the new County Courthouse. Some of the specifications for concrete were so juggled that the contract came nearly being invalidated. It should prove a lesson to contractors and others to be perfectly familiar with what they propose to do when they start a job.

Changes in the specifications relative to concrete tests and compositions were found, and the documents had evidently been intentionally changed. The siliceous substance in the Portland cement was made to read two instead of three per cent, while the time for the setting of the concrete was limited in such a way as to make the contract an impossibility.

The loading test for the concrete after twenty-four hours' test was made to be equal to that required after twenty-eight days; setting time as stipulated by the American Society of Civil Engineers.

It developed upon an investigation being made that the printer, after having received corrected proof-sheets of the specifications, was the recipient of another set of corrections which he took to be official. The figures were changed throughout, and not in places. It is believed that a rival contractor may have instigated these changes in the specifications. The original proofs, which had been corrected by the commission, were found, however, and the contractor saved. An investigation of several weeks has failed to reveal who was responsible for the changes.

Architects Searles & Hirsch have leased a fine location on Prospect Avenue and will proceed to erect a six-story high-class apartment house within the near future. It will be fireproof and modern throughout. They have their offices on the fourteenth floor of the Schofield Building.

One of the biggest contracts let during the past month for a concrete building in Cleveland went to the Carey Construction Company. It was that of a new parochial school for the Congregation of the Sacred Heart of Mary in Brooklyn, a suburb of Cleve-

land. It will be a three-story building, 64 by 98 feet in size, and will cost \$60,000. Walls, piers, stairs, everything will be of reinforced concrete. The outer walls will be veneered with brick. The building will have a slate roof. Work has already been started, and the school will be ready for occupancy next spring. This is the fourth parochial school of the same construction in Cleveland. The three already finished are giving splendid satisfaction.

The use of concrete in both block and monolithic form for automobile garages is becoming more general in Cleveland as its value becomes more apparent. Quite a number have been built during the past season. One of the largest is for Ringle & Co. at 3 East Eighty-sixth Street, near Hough Avenue. It is 45x100 feet.

The Reinforced Concrete Construction Company has been hard at work for the past month or six weeks building a new laboratory for the Western Reserve Medical College. The building is four stories high, 40x80 feet, and in the rear of the college building at St. Clair Avenue and East Ninth Street. Many unique uses for cement will be made during the finishing-up of the building, which will be thoroughly fireproof.

A rather peculiar condition of affairs exists in reference to the erection of the new technical high school, costing \$300,000. The Reinforced Concrete Construction Company almost got the contract for building the entire structure. The School Board, however, wanted the job rushed and decided that pressed brick should be used for the walls, steel fireproofed being utilized in the interior. Now the building is being delayed because the contractor cannot get shipments of brick. The job would have progressed more rapidly if the concrete specifications had been adhered to.

At Alliance, O., just outside of Cleveland, a new Zion, somewhat along the lines of Dowie's colony, is being planned by Rev. Levi Lupton, a man who claims to have the "gift of tongues" and the ability to impart it to others. The new heaven will be of cement, a complete block plant having been installed for the purpose of erecting series of buildings of that material. Money and people are arriving daily at the big farm outside of Alliance on which the new Zion is soon to be reared.

One of the latest innovations in this part of the world is a complete concrete plant afloat. It is being used at Ashtabula, O., in connection with the harbor improvements being carried forward there by the United States Government. At the front end of a large scow on which the plant is located are separate divisions for sand and crushed stone. Just back of these stands a derrick used to hoist the materials to the mechanical mixer. Back of this is a small shed in which the cement is stored. An elevator carries the cement to the mixer. An up-right engine supplies power for the mixer and for a lighting plant so that work can be prosecuted at night if necessary. The capacity of the plant is 150 cubic yards a day. The scow is run alongside the cribwork of new docks and the concrete poured direct into forms from the end of the scow.

Henehan & King have been given the contract for the new contagious-disease hospital for the city of Cleveland, which is to cost \$70,000. It will be largely of concrete. Work has already started on the concrete foundations. It is believed that the new hospital will be a model of its kind. It will have no combustible materials but the doors and window-frames.

The cement market is not quite so firm this month, Portlands having dropped from \$1.80 to \$1.75 in paper sacks. Cloth sacks are almost impossible to obtain. Natural cement, strange to say, has gone up a peg, having risen from 75 cents to 80 cents a barrel. Slag cement remains firm at \$1.25. There is quite an active demand for slag cement here.

The Masons' Supply Company have secured the contract for supplying the C. H. Fath & Son Construction Company with 5,000 barrels of Portland cement and 2,000 tons crushed stone for the foundations of the new \$300,000 West Side market house. Work is humming along and the foundations will be in by the time winter sets in. The work for the superstructure will be let some time during the winter so that work can start in the spring. The Masons' Supply Company have also closed a contract to supply J. Wagner & Sons with 1,000 barrels of Portland cement. This will be used in the construction of the big new intercepting sewer.

The Concrete Building Company of Cleveland has been awarded the contract for twelve new election booths of concrete block for the city of Cleveland. Their bid of \$335 was accepted. The election supervisors expected to get the booths for about \$200, but failed. There is already a sample booth on the West Side which is in service. The walls are of block and the roof of slate and tile. They are especially arranged for the use of voting-machines.

Business with the brick dealers during the past month has been very satisfactory. Paving bricks are being demanded quite briskly at \$19.80, f. o. b. city. The paving season will not end until near December 1, when the weather will be too cold for the proper setting of the concrete.

The American Steel and Wire Company has purchased 100 acres of land in the heart of the Newburg manufacturing district and adjoining its already large plant. It is said that next spring \$3,000,000 will be spent in erecting new steel mills at that point, centralizing much of the work now done at other mills. The mills will be of concrete and brick. It is reported that 50,000,000 brick and vast quantities of concrete are to be used in the new mills, which of course must be fireproof. Work will not begin until the early spring. The company has its own architect to work on the plans. The buildings will cover from ten to twenty acres of ground.

The Cleveland Furnace Company have announced that they have commenced work on doubling the capacity of their plant. A new furnace will be installed and a large quantity of firebrick will be required for it. Slag cement will be used extensively in the work. The same company is building a 1,000-foot dock along the upper river bed.

The Standard Construction Company of Cleveland is busy on a new 1,000-foot concrete dock for the American Steel and Wire Company's blast furnace on the upper river bed. Piles are being driven, but actual concreting is not likely to commence until next spring. The Standard Company has finished a 300-foot dock for the Pennsylvania Railroad on the lake front and a 1,000-foot concrete dock for the same road at Ashtabula. The latter rests on concrete piers which go down eighteen feet to bedrock.

Building Inspector V. S. Lougee of Cleveland has announced that he will make an effort to have building contractors agree to the elimination of cinders from all concrete work. A meeting of the building trades, engineers and architects is to be held to discuss the matter.

The Carey Construction Company of this city has landed another big contract here for an all-concrete fireproof warehouse for the Abbey & Litzel Company. The storehouse will be six stories high and will cost about \$25,000. The building lot to be occupied is 50x100 feet. The entire structure, including walls, floors, staircases and roof, will be of solid concrete. The Carey system of reinforcing will be used throughout. The first floor is to have a large packing-room, and the rest of the building is to be divided into steel-enclosed compartments large enough to hold one and two vanloads of household goods. No combustible material will be used in any part of the building, even the windows and door casings being of metal.

The Carrollton, O., plant of the Deckman-Duty Paving Brick Company of this city is being enlarged so that the capacity will be increased about thirty per cent. A new combination brick machine and pug mill and other machinery are being installed.

Considerable difficulty is expected to be encountered from quicksand in the laying of the foundations for the new ten-story Pope Building on Euclid Avenue. The general contract for the work has been let to the Tidewater Construction Company of New York. Preparations are being made to use large quantities of concrete in making the ground proof against sinking under the heavy load to be placed upon it.

THE WEST COAST.

SAN FRANCISCO, CAL., Oct. 8.—The building situation is in good shape, and hundreds of construction contracts are being finished with a rush. There is an increase in inquiries at a number of the architects' offices, but not many new reinforced concrete buildings are in plan, in comparison with the first of the year. A number of these structures are now completed and many more have their walls up and are approaching completion. It is difficult to make an accurate estimate of the quantity of cement actually going into consumption in this city this month. It is probably much less than four or five months ago, as so many large buildings have been completed. In fact there will be as many buildings as are needed in the downtown district this winter, and probably more offices than can be rented at the high rentals demanded by the owners. On California Street, for instance, there will be more offices to rent than there were before the fire, as a number of the new structures are much taller than the original buildings.

About 50,000 tons of foreign cement were received at this port by sea during September, which is quite a falling off, but not so much as might have been expected when it is considered what immense quantities were imported during the first six

months of the year. The average per month has probably been in the neighborhood of 80,000 tons, as for several months it ran as high as 120,000 to 155,000 tons. Consumption of domestic cement manufactured near San Francisco has greatly increased as the capacities of several of the plants have been increased and more cars can be obtained for shipment to the city. The price of domestic cement remains at \$1.75 per barrel f. o. b. mill, which makes \$2.05 delivered in San Francisco. European cement is a little off in price, from \$3 to \$3.25 being asked for a number of good brands. The price of Alsen's has been maintained at \$3.50 right along, but there is now no unsold stock on hand and all that is afloat for delivery up to the first of next year is sold ahead. Not much Alsen is coming direct to this port at present, but several cargoes are bound to other points on the coast. Five partial cargoes are coming here by regular steamers from Europe.

Prices of crushed rock have declined from \$6 to about \$2.50 during the past few months on account of the increased number of crushing plants, better transportation facilities and decreased consumption.

San Francisco's building permits for the month of September showed an increase of over \$1,000,000 in total construction valuations as compared with August. The September figures exceeded \$4,000,000.

Los Angeles building permits for September aggregated \$1,136,000 in valuation.

The new M. J. Brandenstein building on the northeast corner of Spear and Mission Streets, a fine reinforced concrete tea and coffee warehouse which is to have six stories and a basement, is up to the fourth floor.

The Marysville Sand, Cement Block and Brick Company has been launched with a capitalization of \$50,000. The officers chosen are: President, Michel Reisinger; vice-president, F. B. Kupser; secretary, J. M. Morrissey; treasurer, J. P. Arnoldy. Board of Directors—J. P. Lydon, J. C. Baldwin, F. P. Kupser, M. Reisinger, J. P. Arnoldy, C. H. Gunn and J. K. Kelly. This company have a portion of the city pound leased for the purpose of converting the coarse sand and gravel in the bed of Yuba River into building blocks, sewer pipe, etc. They will also furnish sand for filling purposes.

The National Portland Cement Company has purchased from the Vierra Brothers, a piece of land containing valuable clay deposits in the vicinity of Moss Landing. The clay will be utilized in the manufacture of Portland cement. The clay will be brought to Salinas, Cal., by rail.

Harrison Albright, a Los Angeles architect, claims the distinction of being the designer of the first reinforced concrete schoolhouse in California. The Board of Education of San Diego has accepted his design and will soon begin work on the handsome structure. The award was made in competition with ten other architects of Southern California.

The building will have three stories and will occupy a block of land bounded by E and F Streets and Twelfth and Thirteenth Streets. It will be 150x135 feet. A feature of the plan is the large assembly hall in the center of the building, 68x80 feet. This will be surrounded by a wide corridor, flanked on all sides by class rooms, which will all be lighted directly from the outside. The ground floor is level with the grade. There are six entrances. The ground floor contains a bicycle-room, toilet-rooms, cooking-room and sewing-room for the girls, carpentry and Sloyd-rooms for boys, and also the necessary rooms for instructors. The first floor contains the balcony of the assembly-room, an office, principal's room, teachers' room, sick-room, library and ten class-rooms and toilet-rooms. All of the class-rooms are 22x33 feet. The assembly-room will seat 900 pupils.

PITTSBURG AND VICINITY.

PITTSBURG, Pa., Oct. 15.—Business the past month has been booming at a rate unprecedented for this time of the year, when, as a rule, local contractors have been using every endeavor to get all concrete contracts cleaned up before cold weather came. This year, however, it seems just the opposite, as the majority are taking on much new contract work that will be started, and in many cases completed, this season, even if it does run far into freezing weather. It was demonstrated here last winter that it was possible to continue concrete construction through the cold and freezing weather and still get the best possible results. There is much work that can be done this winter to relieve the pressure when heavy construction starts in the spring, and it has been decided by many firms to push work all through the cold season if men can be obtained. The scarcity of labor in winter is one of the greatest drawbacks in this district.

Concrete, particularly in building and culvert construction, has grown wonderfully popular in the entire Pittsburgh District during the past year. Its growth, after it was shown that it could and would withstand the tests of time, the elements and heavy loads here, was rapid, but the greatest strides and the most friends have been made during the past eight or nine months. There is one branch of the business, however, that is lagging behind, and that is the construction of cement block residences. Architects, as a rule, refrain from suggesting them to prospective builders, and in some cases advise against this form of wall construction.

Three years ago there was but one reinforced concrete building in Pittsburgh, while today there are at least seventy-five. These comprise mercantile buildings, manufacturing plants, warehouses, stores, apartment buildings, amusement buildings and office structures, ranging from four to fourteen stories in height. Authorities claim that no city in the country can show the rapid development in reinforced concrete construction that Pittsburgh can.

The Pittsburgh Concrete Machinery Company, 1410-12 Commonwealth Building, general manufacturers' agents for practically everything in concrete machinery, cement workers' and concrete working tools, reinforcing rods, curbing, facing, forms, etc., have about completed their organization. The company will not act as dealers, but exclusively as manufacturers' agents. The secretary, George D. Steele, will have charge of the salesmen of the concern.

The contract for the cement blocks that will be used in the construction of the first concrete block residence at Titusville, Pa., for T. D. Adams, has been awarded to the J. W. Hale Pressed Stone Company of that city. Mr. Hale reports that he has recently installed apparatus for the manufacture of a large number of ornamental designs.

The Jones & Laughlin Steel Company, Pittsburgh, have awarded a contract to A. & S. Wilson of this city for the erection of a large office building at the corner of Ross Street and Third Avenue. The foundations, column bases, engine-room, etc., will all be of heavy concrete construction, and a gravity mixing plant, in which a Smith concrete mixer takes care of the batch, has been installed 50 feet below the level of the street, the materials being handled by means of long-arm cranes in two and three-yard bottom dump buckets.

At Big Run, Pa., H. J. Beam has engaged in the manufacture of cement blocks for building purposes. This is the first plant that has been started in that vicinity, but the demand is reported good, and several residents say they propose building cement-block residences next spring and summer.

The Jones & Laughlin Steel Company have awarded John L. Kirk, Ferguson Building, Pittsburgh, the contract for furnishing nine Smith mixers, model No. 5. They will be shipped to Aliquippa, Pa., where the company are at present erecting an immense steel and blast furnace plant, and where they will next spring start the erection of an immense by-product coking-plant. This latter plant will require about 200,000 yards of concrete.

A new company for the manufacture of cement building-blocks has been formed at Coraopolis, Pa., a short distance west of Pittsburgh. The company, of which S. S. Buzza is the head, will also engage in general cement and concrete contracting, curbing, sidewalk-laying, etc.

The County Commissioners of Belmont County, O., have awarded the contract for the concrete piers and abutments for seven county bridges to Dixon & Pickett, Martin's Ferry, O. The work will be finished this fall.

Clifton Bros., Zanesville, O., have the contract for the construction of a large concrete sluiceway through the dam located at that city in the Licking River. The improvement will be a great benefit to navigation.

The Pope Cement and Brick Company, Pittsburgh, suffered a rather serious loss this month when the large shipping and loading bin used for sand, gravel, etc., collapsed and dumped the entire contents on the siding running into the large works at Dunbar, Pa. The bin was of heavy timbers, held up by wooden supports. It has been decided to rebuild the bin on a larger scale on concrete foundations, with concrete supporting columns.

The J. M. Gilchrist Sons Company is the name of a new corporation that will engage in the cement, gravel, sand and general builders' supply business in Pittsburgh and vicinity with general offices and shipping docks at Pittsburgh. The incorporators of the company are Harry, James O. and Joseph J. Gilchrist, all of Pittsburgh.

Martin F. Howley of Pittsburgh has invented and patented a new form of concrete gutter which is particularly adaptable to road construction, and which is being used on a number of the new State roads

being constructed in this county. It can be used either with curbing or without. It prevents the water from wearing away the sides of the road.

The contract for the artificial stonework to be used in the construction of the new First Ward School building at Beaver, Pa., has been awarded to the Standard Building Construction Company of Pittsburgh. The work will be done at their plant at Coraopolis. The school will be one of the handsomest and most artistic in Beaver, and will be built by Tallon, Farr & Co. of Beaver.

Hoffner & Veder, Perry and Wooster Streets, Allegheny, are engaged in putting in the heavy concrete foundations at the corner of Ross Street and Third Avenue, Pittsburgh. The walls up to the street level are also being constructed of concrete, and the floors and walls will be fireproofed with the same material.

Good progress is being made in the construction of the heavy concrete foundations that are being built at the immense new plant of the Pittsburgh Steel Company at Monessen, Pa. This plant will cost in the neighborhood of \$4,000,000 and will be built entirely of concrete, all foundations, pedestals, pillars and posts being of this material. In size, this work is second only to that being done at the big plant of the Jones & Laughlin Steel Company at Aliquippa. The company are doing all the work and will require the remainder of the fall for completion before the superstructure can be started.

The Laidlow Company, Fulton Building, Pittsburgh, have been awarded the contract for a large retaining-wall between Pittsburgh and Sheridan for the Pan Handle Railroad. They have also been awarded the contract for the large reinforced concrete culvert being built at Sheridan for the same railroad.

Chapin & Knowles, Frick Building, Pittsburgh, advise that they will be ready for estimates about November 1 for the construction of a large concrete sewage disposal plant for Kent, O. It will be constructed almost entirely of concrete, and the large 150,000-gallon septic tank will be reinforced where the greatest stress occurs. The same firm are ready for bids for the construction of a sewage disposal plant at Orrville, O., where the septic tank with a capacity of 100,000 gallons will also be constructed of concrete and reinforced concrete. Chapin & Knowles have been making a specialty of this class of engineering in the past year or two.

The award of the contract for the construction of the large filtration plant to be built at once for the Board of Water Service of Sandusky, O., has been made to Thomas Lighthbody of Youngstown, O. It was designed by A. C. Schultz, city engineer of Sandusky, and will be built under his direction and supervision. The plant will be constructed almost entirely of concrete, will have a capacity of at least 6,000,000 gallons of pure water every twenty-four hours, and will be completed this fall.

One of the finest concrete contracts that has been awarded in the vicinity of Pittsburgh for a long time has been awarded to the Drake & Stratton Construction Company of Pittsburgh. It calls for the construction of a four-track reinforced concrete bridge on the main line of the Baltimore and Ohio Railroad in the vicinity of Versailles, a short distance east of Pittsburgh. The bridge will span Long Run, will be about 100 feet in length and will have but a single arch. It will be the longest and widest reinforced concrete bridge in the Pittsburgh District, and will cost about \$35,000. It will be pushed to completion as rapidly as possible.

A railroad contract amounting to something over \$900,000, on the main line of the Buffalo, Rochester and Pittsburgh Railway, has been awarded to Thomas A. Shoemaker of Bellefonte, Pa. It calls for the construction of a second track between Carmen and Brockwayville, on which there will be about a dozen bridges, all the piers and abutments of which will be of concrete, and a 1,200-foot tunnel which will be lined for a part of the way with this material. There will also be several retaining-walls and some large culverts on the line, all to be of concrete.

A plant for the manufacture of concrete building-block and steps has been started at Mars, Pa., by L. R. McCandless of that city. Next year these lines will be augmented by the addition of several others.

The Iron City Sand Company, Pittsburgh, Pa., are working all their sand and gravel dredges in the three rivers in this vicinity in order to lay up as large stocks of material as possible in anticipation of an unusually heavy demand when the rivers are frozen.

The contract for the cement blocks that will be used in the construction of the new residence to be built this fall at Ligonier, Pa., for L. B. Weller has been awarded to Reed Fry of that place, who will manufacture the blocks at the new plant he recently

started up there. The residence will be the first constructed of cement blocks in the valley.

The Nicola Building Company, Farmers' Bank Building, Pittsburgh, have been awarded the contract for the erection of the large concrete factory to be built and operated at Youngstown, O., for the Republic Rubber Company of that city. The Nicola Company report that they are having trouble in securing a sufficient number of skilled carpenters familiar with concrete form work. It is hoped that have the plant completed and in full operation this winter.

At a meeting in Pittsburgh this month the engineers and officials of the Pittsburgh and Lake Erie Railroad decided that during the coming year all improvements to bridges, culverts, retaining walls, etc., should provide for their construction of concrete and reinforced concrete. The engineering department made an inspection of the concrete work that has been done on the line between Pittsburgh and Youngstown during the past year, and decided that it was so much more economical in comparison with stone masonry and steel construction that it should be adopted wherever possible. This decision will be carried out on a large volume of improvements to be made this fall and next summer.

The Sawdus Paving and Construction Company, Pittsburgh, Pa., have been awarded the contract for the construction of two large reinforced concrete sewers at Oakmont, Pa.

PHILADELPHIA.

PHILADELPHIA, Pa., Oct. 15.—There is no disguising the fact that the cement situation at this time is somewhat unsatisfactory, but that there should be a slight falling-off in work at this time of the year is nothing unusual or alarming, and more than likely the enormous and exceptional amount of trading done at the same period for the past few years has created a false standard, which has had the effect to give the return to old conditions the appearance of an abnormal instead of a comparative depression in business. With the exception of a few large concrete buildings, nothing extensive is on the boards at present, and though there is considerable small work in which quite a large amount of cement is used, there seems to be a lack of the usual snap in trading. There has been considerable fluctuation in cement values during the last month, but lime and the other building materials are holding fairly steady. However, one thing is certain: there is business to be had, if not so great in volume as last year, for the hustler who does not waste his time studying conditions, but is closely watching the dealer and builder, and so is always ready to place in the first bid. There is prospect of improvement for the latter part of October and the month of November, with possibility, weather permitting, that December will help to make up a fair volume of trading.

The Charles Warner Company, 810 Land Title Building and Wilmington, Del., report that they are getting business right along, but that there is more or less of languor in trading, owing to causes hard to define. They are more hopeful for the rest of October and November, however. Their plants are active.

Philip S. Vollmer, sales manager of the Atlas Portland Cement Company, 1210 Fidelity Building, states that while there is no rush in business the total amount of sales is far from insignificant. At the mills orders have been coming in in very fair volume.

The Lyster Supply Company, Thirtieth and Spruce Streets, dealers in cement, lime, sand, etc., report business showing some improvement during the last few weeks.

The P. H. Fairlamb Company, sand, lime, cement, etc., 115 South Thirtieth Street, report business coming in steadily, though not in large orders.

The Knickerbocker Lime Company, Inc., Twenty-fourth near Callowhill Street, extensive suppliers of building material, are always busy in one line or another. W. B. Irvine of this company states that the machinery for their new hydrating plant has all been received, and the plant will be completed in a few weeks. Chas. C. Kritzer, the lime expert of Chicago, is here for the purpose of applying the finishing touches.

The Whiteland Lime Company, Devault, Pa., is too busy to quarrel with trade conditions.

The McCoy Lime Company, Bridgeport, Pa., report business moving along quietly, not rushed as at the same time last year, but altogether very satisfactory.

The Keystone Lime Company, Plymouth Meeting, Pa., report orders coming in steadily with fair prospects for next month's trading.

The Philadelphia Fire Brick Works, 2306 Vine Street, are not busy on large orders at this time, but report trading, generally speaking, steady.

The Cyrus Borgner Company, Twenty-third above Race Street, report business, though coming in right along, not so great in volume as a year ago, and lacking in push and snap.

The Thomas Cement Construction Company, Joliet, Ill., to purchase patents from Augustus G. Thomas for marble blocks, etc., capitalization \$100,000, was chartered under Delaware State laws on September 28, 1907.

Wm. H. Harding, Frederick L. Loeb, Sam'l Y. Heebner, Abraham Ismael, Gabriel Blum, Ralph Blum, Chas. M. Saeger and Isidore Ismael have made an application at Harrisburg, Pa., for a charter under the style of the Saylor Portland Cement Company.

Sauer & Hahn, architects, of this city, were recently commissioned to prepare plans for several large buildings, and an addition to the present plant of the Standard Hosiery Company, in North Lawrence Street. The work will consist of the erection of a new spinning-mill which will be five stories high, 50x150 feet; an engine and boiler-house, one story high, 36x96 feet; a picker house, 36x44 feet; a dye house, 18x98 feet, and a large reinforced concrete reservoir. All the buildings will be of reinforced concrete and slow-burning construction. Cost about \$100,000.

Calvin W. Rogers has plans posted from Henry L. Reinhold, Jr., for the erection of a brick, concrete and frame four-story and basement hotel at Manoa, Delaware County, Pa. The building will be 40x100 feet, with two wings, each 40x125 feet. The cost will be about \$100,000.

William Steele and Sons Company were granted a permit on October 1 to erect for the Horn & Hardart Baking Company, a two-story and basement building at 202 to 210 South Tenth Street. The building will measure 109.11x185.8 feet, and will be fireproof throughout, the materials being reinforced concrete and brick. The cost will be \$98,000. F. Russell Stuckert is the architect.

Dodge & Day were granted a permit on October 3 to complete the five-story factory building in process of erection at the northeast corner of Fifth Street and Glenwood Avenue, for S. L. Allen. The building will be 136.6x124.11 feet, and of reinforced concrete construction. The cost will be \$110,000.

Jonathan Wainwright, president of the Drake & Stratton Bridge Contracting Company, died suddenly of Bright's disease at his summer home at Ogdensburg, N. Y., on October 11.

NEW YORK.

NEW YORK, Oct. 17.—The local situation offers little encouragement at the present writing. If anything, money is tighter than it was a few months back. Speculative building has almost entirely stopped. The prices of building materials have not been affected to any appreciable extent, but labor has become more plentiful, and as a consequence has come down a little. There is still a vast amount of construction going on, but compared with former years the season has been extremely backward. About forty-five million dollars less has been set aside this year for new buildings and alterations in New York than was set apart for the same purpose last year during the corresponding period up to the first week in October, or, in other words, New York has planned to spend \$93,000,000 as against \$143,000,000 last year. One of the hardest things to contend with at the present time is collections, contractors, builders and material men have been having a hard time keeping their bank accounts in a fair condition. Considering everything, however, this has been a fairly good season, because there was a considerable amount of construction work projected long before the tightness in the money market became apparent, and these had to be completed. The contracts were all let at prices which were considered fair at that time, and which might be considered a trifle high at this time. So far there has been no falling-off in the demand for building materials, but as the tag-end of the season approaches it becomes apparent that this condition cannot always keep up. The building material man sees no cause for any real apprehension, because there is still plenty of work going on, and the natural growth of a city like New York means the consumption of a vast amount of material all the time. Some of the dealers are more optimistic than others, and say that there has been a distinct revival of new construction within the past few weeks.

Orrin F. Perry, manager for the Rockland-Rockport Lime Company, Fuller Building, says that business has been fairly good with them, and that prices have held their own. This in face of the fact that the majority of the big construction work is well under way, specially the foundations, and that a falling-off in demand is sure to come with the end of the season. He says that on the whole they have had a very good season, although the stringency in the money market has made collections somewhat slow. Mr. Perry says there are quite a number of new buildings projected and the outlook seems promising.

The Hotel Astor, in Times Square, built less than three years ago, is to be enlarged. It now covers 200 by 160 feet between Forty-fourth and Forty-fifth Streets, on the west side of the square. It is proposed to add 100 feet on both sides, increasing the plot to 200 by 260 feet. William Waldorf Astor is the owner. The present construction cost to erect, exclusive of the value of the ground, nearly \$5,000,000, and the addition will represent an investment of approximately another \$3,000,000, making \$8,000,000 in all. Clinton & Russell, 32 Nassau Street, are the architects. It was rumored some time ago that Mr. Astor would build another hotel in the same neighborhood, but up to this time no plans have been drawn.

The Thompson & Starrett Company, 49 Wall Street, have the general contract to erect another fireproof mercantile building for the Adams-Westlake Company of Chicago to cost about \$150,000. Jenny, Mundi & Jensen, 171 LaSalle Street, Chicago, are the architects.

The A. J. Robinson Company, 123 East Twenty-third Street, have the general contract to erect a seven-story fireproof stable building 100 by 200 feet for the American Express Company at 217-223 East Forty-third Street and 224-226 East Forty-fourth Street, at a cost of \$360,000. Charles W. Romeyn, 55 Broadway, is the architect.

Plans are being completed for a twelve-story fireproof loft building for David Spiro to be erected on a plot 98 by 105 feet at 19-23 West Twenty-first Street, to cost in the neighborhood of \$750,000, and Robert D. Kohn, 170 Fifth Avenue, is the architect.

The Edison Portland Cement Company have appointed G. L. Bernard their Boston representative. The office of the company will be in the Postoffice Square Building.

The up-town terminal building for the Hudson & Manhattan Railroad Company, to be erected on a plot 200 by 300 feet at Sixth Avenue, Thirty-second and Thirty-third Streets, in Greeley Square, will have twenty stories or more. The exterior will be of limestone, reinforced concrete, brick, steel and terra cotta, and the upper stories will be equipped for hotel purposes. Clinton & Russell, 32 Nassau Street, and Gordon, Tracy & Swartwout, 244 Fifth Avenue, will be the architects.

At the southeast corner of Broadway and Thirty-ninth Street, fronting 119.6 feet on Broadway and 97.4 feet on Thirty-ninth Street, will be built a twenty-story hotel in the French Renaissance style for George B. Wilson of Philadelphia. Ralph B. White of the same city is the architect. It is estimated that this hotel will cost not less than \$2,000,000.

Work has been temporarily suspended on the large power-house which the New York Edison Company is erecting at Two Hundred and First Street and Harlem River. This is to be the second largest of the company's big waterside stations, known as Waterside No. 1 and Waterside No. 2, situated on Thirty-eighth Street to Fortieth Street and the East River. The concrete foundations have been completed and about fifty per cent of the bulkheads and piling have been installed. Thomas E. Murray is the engineer and Charles F. Hoppe is the architect.

Contractors will be invited to submit estimates for the general contract for the new four-story fireproof police station, prison and stable building combined which is to be erected on a plot 51.2 by 219.11 feet at Nos. 156-158 Greenwich Street and Nos. 163 to 165 Washington Street, at a cost of about \$230,000. Materials will be specified as follows: Granite and stone exterior, marble coping, stone cornice, concrete, and slag flat roof. Steam heating, direct and indirect radiation, electric lighting, etc. The city of New York (office of Police Department, 300 Mulberry Street) is the owner, and Stockton V. Colt and Thornton Clard, 277 Fourth Avenue, are associate architects.

The Charter Construction Company, 198 Broadway, will soon erect a six-story high-class flat building on Broadway, northwest corner of One Hundred and Twenty-seventh Street, at a cost of \$125,000. Schwartz & Gross, 347 Fifth Avenue, are preparing plans.

Messrs. Bernstein & Bernstein, 24 East Twenty-third Street, are preparing for a six-story flat for J.

Katz, 70 East One Hundred and Eleventh Street, to be erected at Nos. 164-166 Waverly Place, to cost \$45,000.

David Lenten, No. 92 St. Nicholas Avenue, will erect a six-story flat building on the south side of Sixty-sixth Street, 275 feet east of Second Avenue, to cost \$45,000. George Fred Pelham, 503 Fifth Avenue, is now preparing the plans.

The cement sales managers throughout the country will hold a meeting at the Hotel Astor in December, just prior to the annual meeting of the National Association of Portland Cement Manufacturers. This association has been spoken of several times before, and no doubt this meeting will be very largely attended.

H. K. Hobart, who represents the United States Gypsum Company, 1123 Broadway, reports a very active business during the past season. Since the introduction of their product in this territory, the company's business has grown wonderfully, till now it is specified by many of the leading architects for the highest grade of work. One of the biggest jobs which they have secured is the City Investing Building, now being constructed on Broadway, Cortlandt and Church Streets, and which is the biggest job let in New York for some time.

Mr. Bailey, the veteran cement man of the Lawrence Cement Company, No. 1 Broadway, says: "Conditions are about the same as they were last month, while the market prices are still strong. The mills of the Lawrence Cement Company at Siegfrieds, Pa., have been enlarged and the output will be much greater than heretofore."

Mr. J. O. Elinger, of the Reinforced Cement Construction Company, No. 1 Madison Avenue, has returned from a sojourn in the Adirondacks. In a short time Mr. Elinger will introduce a new concrete system which he claims will be the simplest and best in existence.

Mr. Angel of the Planet Cement Company, No. 1 Madison Avenue, reports business as being exceptionally good, considering the prevailing conditions that have hampered some of the other building trades in and around New York. Mr. Angel says: "Prices are holding good and the demand—that is, taking in consideration the Eastern territory—is very good."

George Stranahan, of the Consolidated Rosendale Cement Company, 26 Cortlandt Street, reports all well and prospects improving all along the line.

James E. Bale, of the Pennsylvania Portland Cement Company, 26 Cortlandt Street, says that sales are very satisfactory and that the outlook is promising.

SYRACUSE, N. Y.

SYRACUSE, N. Y., Oct. 15.—There has been no let-up in building operations. Present weather indications are that the contractors will be able to continue their work later than usual, although they are making preparations to clean up jobs on hand in order to be through before the bad weather sets in. The main feature of the news this week is the drop in the price of cement. The manufacturers are now quoting a price of \$.95 net at the mill or \$1.25 with bags. It is said that the reason is the fact that the mills are well stocked up on account of the wet weather of the spring and early summer.

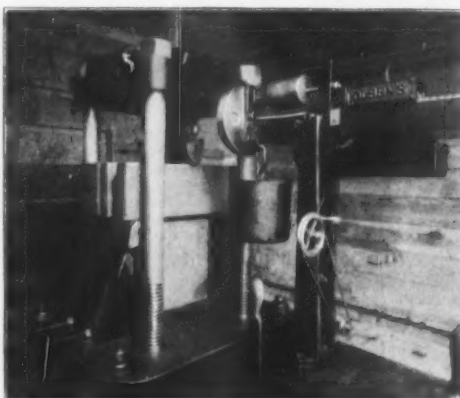
C. J. Sullivan has been putting in a large number of building block foundations and sidewalks. He has also nearly completed a large job of abutments on the Rome, Watertown and Ogdensburg Railway. Building blocks are being sold as fast as he can make them at his North State Street plant.

According to Hill & Van Wagner the use of hollow building block is rapidly on the increase. This concern has been making a quantity this year. They expect to wind up their sidewalk work in about two weeks.

The Consolidated Engineering and Construction Company have received the contract for building a new gymnasium at Syracuse University. The tile and marble work in that alone will amount to over \$30,000. This contract has not been let. Swimming-pools and elaborate baths will be features.

The special committee of the New York State Legislature, which is holding sessions throughout the State to find out what should be included in the new law on the road subject, sat here Wednesday, October 15. Representatives from several counties were present to give their opinions. The State of New York has \$50,000,000 to spend for good roads immediately, and there will be a chance for a lot of material men.

The Stewart-Shanley-Kerbaugh Company of New York will make Syracuse their headquarters in executing the contract which they have for over forty miles of the Barge Canal. Members of the company were in town recently and went over the contract,



TESTING CONCRETE BLOCKS.

which extends from Baldwinsville to Mosquito Point. Thus far over one-quarter of the Barge Canal contracts have been let, and the \$25,000,000 awarded is \$1,250,000 inside of the estimate of the State Engineer. This is considered remarkable as the price of labor and materials has advanced since the award was made. About \$350,000 worth of work on the canal is now being done every month.

State Superintendent of Public Works F. C. Stevens was in Syracuse recently and announced that a considerable section of the Erie Canal running through Syracuse would have to be rebuilt as soon as navigation closes. This is made necessary on account of the age of the Onondaga Creek culvert.

The New York Central Railroad has begun driving piles preliminary to the construction of an underpass for the Syracuse and South Bay Electric Railroad, which will pass under its tracks.

Edward G. Acheson, a clay expert, addressed the Syracuse section of the American Chemical Society Wednesday October 15 on "Deflocculated Graphite." Mr. Acheson in experimenting with clay found that a moderately weak plastic clay treated with tannin was increased in plasticity sometimes 300 per cent. In the year 1906 after he had discovered a process for making a fine, pure, unctuous graphite, he made experiments to determine what effect the use of tannin would have on it in connection with water, and he learned that it caused the graphite to be reduced to an extremely fine condition believed to be molecular. It remained suspended in the water and was so fine as to pass through the finest filter paper. In this condition graphite is termed "deflocculated," and the result is known as the "Acheson effect." Furthermore, he can remove the water and cause the graphite to remain suspended in oil. Mr. Acheson further told his audience that not only can this effect be produced in graphite and clay, but apparently on non-metallic bodies generally, it having been secured with silica, alumina, lampblack and siloxicon, one of Mr. Acheson's new electric furnace products that is used for refracting purposes. This list, it was stated, can be increased, so the benefit of his invention is likely to be broad.

At the annual meeting of the Solvay Process Company the following officers were elected: President, Frederick R. Hazard; vice-president, W. B. Cogswell; vice-president, R. C. Hazard of Penedale, R. I.; general manager and chief engineer, E. N. Trump; treasurer, O. V. Tracy; secretary, G. E. Francis; assistant treasurer, G. W. Corey; assistant secretary, Louis Krumpholtz; general counsel, Stewart Chaplin.



TESTING FIRE-RESISTING QUALITIES OF CONCRETE.

INTERESTING CONCRETE TESTS.

Continued from page 44.

much longer time before they can be removed. When the concrete blocks are removed from the forms they are placed in the storage-room and tested at different ages. The storage-room used for concrete blocks is similar to that shown in Fig. 3. Cylinders are also made from the same concrete that is used in the blocks, and the results of tests of the cylinders and of the blocks establishes a relation between the strength of the concrete in the cylinder and that of the concrete in the block.

When the blocks and cylinders are placed in the storage-room, each test piece is numbered and its number is filed away on a card in a card index. Each card bears the date on which the test piece is to be tested and the cards are filed in chronological order. This brings the current date at the front of the drawer each morning, when cards bearing the same date are taken out and the pieces are taken from the storage-room and tested. The results are compiled on forms and later published in reports issued by the Geological Survey.

Concrete blocks are tested in the laboratories in two different ways: first as shown in Fig. 5, to see how much of a center load each block will stand. Although blocks are not actually subjected to a load of this kind in practice, the results of this test make it possible to compare the relative values of different building-blocks. Second, after the block has been broken at the center by this load, each half is placed in the testing-machine and crushed, in order to find the crushing strength of the block. The results of this crushing test show how much pressure similar cement blocks will stand when used in actual building construction.

The results of the great fires at San Francisco and at Baltimore demonstrated very clearly the fact that modern buildings are not so nearly fireproof as they should be and as they can be made. The lack of fireproofing in the past has been due somewhat to the reluctance of owners to add a small percentage to the cost of their buildings by properly fireproofing them. The failure to employ fireproof construction more generally, however, was due in part to the fact that proper information was lacking, and many engineers, architects, and owners who tried to make their buildings fireproof used all the information at their command at the time of building.

The art of fireproofing has been developed rapidly within the last few years but there is still much to be done, especially in relation to the fire resisting properties of concrete. In order to obtain information to meet these needs a series of fire tests are being carried on by the Geological Survey at the Fire Underwriters' Laboratory at Chicago.

For this purpose a hanging door having a steel frame and a one-foot wall of firebrick inside of it is used. At the center of this frame there is an arched opening of about the size of an ordinary door. For the fire tests this opening is built up successively with different materials, ordinary building brick, firebrick, hollow tile blocks, the different kinds of cement building-blocks, stone, concrete and terra cotta. When the opening is filled with cement blocks it has the appearance shown in Fig. 6. After the opening is filled, a flaming gas jet is played all over the door for a long time and when the heated surface is very hot, the gas is turned off and the door allowed to cool. In some tests the cooling takes place slowly, in others a stream of water is played on the door immediately after the gas is turned off in order to reproduce as nearly as possible the actual conditions in a fire.

When these tests are completed, the results will not only show engineers and architects what material is best for fireproofing and how much should be used to procure the best results, but will also teach the small builder, the builder of a home, what kind of a cement block is best adapted to make his house fireproof.

It is the consensus of opinion among engineers that a reasonably fireproof building can be constructed, and it is hoped that the art of fireproofing will be so developed in the next few years that the public will also be convinced that this is true. It is also desirable that the public should be thoroughly informed as to fire resistive qualities of the various classes of building materials, and it is expected that the work being done by the United States Geological Survey will furnish reliable information not only on this subject, but also in regard to the strength and other properties of these materials.

Concrete Feeder for Contractors.

KANSAS CITY, MO., Oct. 1.—A journal which, like ROCK PRODUCTS, seeks to be of practical service to its numerous clientele, is bound to apprise its readers of new devices for doing more work at less cost. I therefore examined the new concrete feeder invented by H. C. Lindsey & Son. Being large contractors themselves, the requirements of their business led them to experiment for the purpose of ascertaining if some improvement over the various methods employed could not be secured. The result was the invention of what, in their judgment, is a superior feeder, and to protect themselves they took out a patent. The plant makes use of two automatic dumping elevators. One elevator is used to hoist the aggregates from the ground to the feeding chute of the mixer, and the other to hoist the concrete from the mixer to a hopper on the building. But one man is necessary to operate each machine. Another valuable feature is the small amount of street room required for the plant.

Concrete Block Cattle Barn.

The new cattle barn at the Wisconsin State Fair grounds at Milwaukee is probably the largest building in that part of the country to be built of concrete blocks. The blocks are furnished by the Pennsylvania Coal and Supply Company, Milwaukee. Three other large buildings being erected at the grounds this year are also of concrete block construction.

Side Talk

The Standard Machine Company, Kent, Ohio, build the "Standard" mixer, which automatically measures and mixes the concrete materials. It has a continuous action that means a whole lot to the contractor who wants large quantities of concrete properly mixed. If the operator knows what he wants, the Standard mixer will do all the rest—provided you can get the materials to the mixer. The capacity is enormous.

The American Process Company, 62 William Street, New York, state that they are busy at the present time installing a large number of their Direct Head Dryers for handling pebble phosphate in Florida, and are also furnishing one for a new sand-lime brick plant in Florida. They have also received a duplicate order from the Public Service Corporation of New Jersey for doubling the capacity of their plant, which was installed several years ago.

Hendricks' Commercial Register of the United States for 1907 has been issued. It is the sixteenth annual, and better and more perfect than ever before. It is probably the best industrial directory ever published, certainly classified more intelligently in its comprehensive scope of the whole field of commercial enterprise than any other we have ever seen. It is expressed to any part of the United States for \$10.00. S. E. Hendricks Company, publishers, 74 Lafayette Street, New York.

The C. O. Bartlett & Snow Company, Cleveland, Ohio, have just issued their general catalogue No. 18, as the basis of operations for the year 1908. It is a comprehensive volume giving full details of the line of labor-saving machinery and factory equipment manufactured by this concern, which among others includes a full line of cement-making machinery, dryers, crushers and mechanical conveyors of every kind. The company maintains an able corps of engineers who make a special study of each customer's requirements, and the reputation they have established for dividend-earning plants is the best explanation of their ever expanding business.

The following test on cement brick is given for the benefit of those already engaged in concrete construction and others seeking this field: "A 5 to 1 brick, 30 days old, stood a compression test of 41,800 pounds, or 1,323 per square inch. A 4 to 1 brick that lay on the ground during a severe winter, alternately freezing and thawing, stood a test of 67,200 pounds compression, or 2,126 pounds per square inch, equal to 206,144 pounds per square foot. At 112 pounds per cubic foot it would require a column 2.175 feet high to crush at the base under its own weight. This would equal 181 twelve-foot stories in a building. More remarkable yet is the transverse test. This brick was placed on two blades 7 inches apart and a pressure of 870 pounds applied by a blade on the middle of the brick before it broke. Tests were made by Prof. Woolson, E. M., Columbia University, New York City. By making a stronger mixture and giving proper attention in curing product will develop even better tests." This high average test was made on the product of the Helm Cement Brick Press, manufactured by the Helm Brick Machine Company, Traverse City, Mich. This press, we understand, is peculiarly adapted to producing pressed cement brick, also two-piece and veneer blocks, using graded materials with a wet mix, with a dryer facing on top and pressing of the brick face up. The facing and body, being pressed at once, unite perfectly. This process secures a denser brick, thereby greatly increasing the strength, making it possible to use less cement. The heavy uniform pressure being exerted on wet concrete gives twice the strength that is obtained by using a dryer mixture. It secures a true concrete product as hard as stone and as impervious as granite. The machine has gained in popularity to such an extent that rush orders calling for express shipment are received, such an order being recently received from Scottsbluff, Neb.

The Besser Manufacturing Company, Alpena, Mich., publish a big text book which gives complete directions for the manufacture of cement products. They sell the book for 25 cents, and promise to refund the money if the purchaser is not contented with the value received. They stand for the wettest possible mixture in molding blocks.

The Peerless Brick Machine Company, Lumber Exchange, Minneapolis, Minn., are constantly receiving testimonial letters from the users of the "Peerless" brick machine, which is probably making more cement brick throughout the Middle West and Northwest than all others combined. Wherever the materials are right there is complete success and big profit in operating a Peerless.

Bates Valve Bags are solving one of the greatest difficulties encountered in the manufacture of cement. This is only one feature of the benefit, for the contractor also feels "much obliged" when he don't have to collect up all the cement bags and bundle them up for reshipment to the mill. Very often the



A. LATHAM, SECRETARY-TREASURER SUPERIOR PORTLAND CEMENT CO., CHARLESTON, W. VA.

cost of collecting and returning the empty bags amounts to more than the return credits, and that is why so many never get back to the mill. The cloth bag was an enormous burden on both the manufacturer and the user, while the dealer never knew where he was at in the bag business. Now it is simple enough.

The Business Men's Club of Huntsville, Ala., under the leadership of Joseph J. Bradley, and comprising the principal business men of the little city to the number of five hundred active members, are conducting a campaign for the purpose of attracting profitable industries to secure a population of fifty thousand by the year 1910. They have an unlimited amount of natural gas, unbounded timber resources in the immediate neighborhood, with several varieties of valuable clay beds, and a solid body of crystalline limestone underneath. The water supply of Huntsville comes from a famous spring, which has a flow of many thousand gallons per hour. The shipping facilities are excellent, as there are two railroads, and a third is now being built, thus making an ideal factory site, with direct connections to all the principal markets of the South, such as Memphis, Birmingham and New Orleans. The Business Men's Club of Huntsville will be glad to communicate with industries seeking location, and will show the advantages in each special case.

One of the recent novels from the press of L. C. Page & Co., Boston, is "Mystery Island," by Edward H. Hurst, for several years an artist on the editorial staff of ROCK PRODUCTS, during which time he collected the material for this novel. The book reviewers speak very highly of this work. The editorial force of ROCK PRODUCTS appreciate it still more, because poor old Harry, who fought consumption for five years, finally passed away, leaving a heritage in "Mystery Island." While the plot is not a deep one, it is an attractive and interesting story that once read will be passed along. It is so full of real life and so ably written that the reader's attention is firmly held until the finish. We presume this spells success. Ask your bookseller for it.

The Brown Hoisting Machinery Company, Cleveland, O., have just issued a neatly printed and beautifully illustrated pamphlet of twenty-eight pages describing their Brownhoist locomotive cranes with grab-bucket equipment as applied to the handling of limestone, ore, coal, slag, sand, etc.

Everitt W. Hogle, secretary of the Illinois Masons' Supply Association, has removed his office from the Manhattan Building, Chicago, to 1205 Hartford Building, opposite the Tribune office.

The Kilgore-Peteler Company, Minneapolis, Minn., manufacturers of steam shovels and dump cars, announce a new catalogue. It is in press at this date and will be ready for mailing by the middle of November. It will be comprehensive in its details and illustrate all their lines of manufacture. Frank C. Bestor, secretary and treasurer of the company, reports an excellent business this season.

The Sturtevant Mill Company, Harrison Square, Boston, Mass., build a full line of rock-crushing machines of well-known dependable types. They have an ingenious and extremely useful and serviceable equipment, especially designed for the use of concrete contractors. It consists of a small but powerful jaw crusher mounted on wheels, so that it may be drawn by a team from one job to another and placed in the most convenient position with regard to the location of the material to be crushed. Another part of the same outfit consists of a separating screen and bins for three sizes of broken stone, also mounted upon trucks for transportation when empty. The bins are provided with loading chutes to discharge by gravity into carts or wheelbarrows, and provision is made for connecting the crusher with the screen by a flight of slice-cup buckets, operated by the same power that drives the crusher and runs the screen. It really constitutes a complete crushing plant that can be temporarily set up at any job where there is a large accumulation of old foundation stone which can be crushed and made available for new concrete work. These little outfits have proved very profitable in many of the big foundation jobs of the large cities, and in tunnel work, where the bore progresses through rock, such a plant will transform the excavated material into live stock for new concrete work. The plant is strictly up to the times, and one of the improvements which foundation contractors and others, who have a due regard for modern opportunities for economy, may not overlook.

The Simpson Cement Mould Company, Columbus, O., have perfected their exclusive designs for the manufacture of artificial stone accessories, and have now provided something to meet every requirement of the architect who is disposed to use cement building materials. For a long time the lack of ornamental features for buildings was a pronounced drawback to the dry-mixed field of building operations. Now, with porch columns, capitals in almost endless varieties, balusters, newel posts, porch and gable ornaments of every sort, this concern has made a specialty of removing one of the objections to this new line of building material. Success is theirs because they fill a long felt want.

The Pettyjohn Company, Terre Haute, Ind., claim that their study has been to reach perfection this year with the three great essentials in cement block making—Wet Process, Face Down, Damp Curing. Their Invincible machine does this, making one block at a time, while the Tandem Invincible makes two blocks at once. They have a book entitled "Stone-making" which tells how to use their Invincible machines with great profit, and it is free for the asking. Well worth perusal and study.

The J. R. Alsing Company of New York are issuing a pamphlet, and will mail the same to every user of tube mills, or anybody contemplating the use of tube mills. In this pamphlet they offer a 5'x22" tube mill on trial for ninety days, under the condition that their tube mill will use twenty percent less horsepower than any other tube mill of the same size. The terms of this offer carry only the following stipulations: In the event that the customer can prove that the Alsing tube mill will not save at least twenty percent of the horsepower of any other style of tube mill the mill will be presented to him free of charge. At the same time they ask for an agreement from the customer whereby the customer agrees to pay a bonus of \$10 for every horsepower saved over twenty percent.

The Hercules Concrete Block Machine, manufactured by the Century Cement Machine Company of Rochester, N. Y., has gained an enviable record during the past four years. It has been used by many of the largest constructing engineers throughout the world, and is capable of producing the very highest grade of concrete stone in an unlimited number of sizes and designs. The fine product turned out on this machine and the reputation gained by it in the past prompted a request on the part of many stonemakers for a Hercules machine built along lines similar to the regular Hercules, but shorter in length. The manufacturers finally decided to place on the market a second machine known as the Hercules Special, about June 1, 1907. There is no doubt that the Hercules Special is filling a long felt want on the part of many prominent stonemakers desiring a smaller and cheaper machine than the regular Hercules. Any size or design of block can be made from three inches to thirty-two inches long and any height from four inches to twelve, with widths from four to sixteen inches. The company report a large number of orders already on file for the Hercules Special.

The Lake Shore Concrete Supply Company, Hathaway Building, Milwaukee, Wis., has opened a 3,000,000-yard sand and gravel hill at Schleisingsville. The hill is only a short distance from Milwaukee, giving the company a low freight rate. In the forty acres comprising the grounds of the company is found foundry sand of good quality. The company is supplying the sand and gravel for concrete contractors and other building interests. They intend to equip the properties for larger capacity next season.

Chas. Hazen, Altoona, Wis., has discovered a deposit of fine molding sand on his farm and has begun shipping it to the iron foundries at Superior, Ashland, Duluth and Eau Claire. At present he is hauling the sand by wagons, two tons to the load, to the railroad for shipment. He has a big demand for the

sand, and his operations are only limited by his capacity for delivering the material.

A. A. Pauly, general manager of the Concrete Stone and Sand Company, Youngstown, O., has secured sweeping basic patents upon his invention of the Pauly Pushed Structural Concrete Tile, which has been demonstrated in satisfactory tests to be fireproof beyond anything else of the kind yet marketed, and in every way adapted to the best modern construction engineering for floor spans, partitions and curtain walls. A company has been organized at Youngstown to manufacture this tile, and several companies are organizing for the same purpose at other points under the Pauly patents. The business will only be placed in strong hands, and should revolutionize this feature of structural material.

The raw material machine room of the plant of the Kansas City Portland Cement Co. contains, among other equipment, six Standard 5x22-inch Gates tube mills built by Allis-Chalmers Company, used for dry grinding. They are all belted to the main line shaft extending through the room. Materials are passed through the rotary screens from the tube mills and the rejections are sent back to the hoppers by means of bucket elevators. The finishing room, which is 68x126 feet, contains four more Allis-Chalmers tube mills of the same size and type as those mentioned above. This is the most modern cement plant, having come into bearing the present season with the most gratifying success.

The Ricketson Mineral Paint Works, Milwaukee, Wis., announce that their mineral colors have been selected for tinting the cement floor of the costly Union Station at Washington, D. C., which has been under construction for several years. This is believed to be the largest cement floor in the world, measuring 150 by 750 feet. It is being laid in panels of artistic design, with borders and geometrical figures in colors. The test of coloring material in this case was very rigid. The Milwaukee concern are justly proud of having received the award. They are now furnishing the mineral colors for this job in large quantities.

The Standard Roller Bearing Company of Philadelphia, Pa., has increased its capital of \$3,500,000 to \$5,000,000. Large additions are now being made to the plant and equipment for the purpose of enlarging their department for the manufacture of roller bearings for shafting hangers and also for the establishment of an entirely new department for the manufacture of roller bearings for trolley cars. The saving by the use of roller bearings on trolley cars amounts to about \$300 a year per car, and the demand is so great that a large addition to the Stand-

ard Company's plant is required to take care of the business.

A ROCK PRODUCTS representative had a pleasant visit recently from an old friend, William D. Craven, Jr., formerly with the Allis-Chalmers Company of Milwaukee. Mr. Craven has withdrawn entirely from the old house and is now largely interested in the Jacobson Engine Company at Chester, Pa., a comparatively new concern, but one which is rapidly coming to the front. It obtained a charter under Pennsylvania State laws in July of this year; capitalization, \$100,000, all paid in. The officers are: C. Jacobson, president; R. E. Ross, vice-president, and J. C. Taylor, treasurer; the office of secretary still to be filled. They have taken the old mill property of R. E. Ross, in which they have installed their plant. This building covers an area of about one-half block and is fitted up with all the latest appliances, making it a thoroughly up-to-date plant in every way and equal to all demands. They manufacture the Jacobson automatic gas engine for all work where medium and large sizes are required, and make a specialty of engines for operation on producer gas, natural, blast furnace and illuminating gas, operated by throttling valve and automatic coilless valve, in single cylinder, twin and twin cylinder. These engines, ranging from 30 to 300 horsepower, are directly connected with electric generators and belted types. The success of this enterprise, begun under such favorable auspices, is beyond speculation. The successful users of the Jacobson engine are the Bonney-Floyd Company, Columbus, O., 110-horsepower single tandem engine; the Griswold Manufacturing Company, Erie, Pa.; the Burton Milling Company, Burton, W. Va., 38-horsepower natural gas, and the A. H. Nelson Machine Company, Bridgeport, Conn., producer gas. The names of some recent orders taken are: The Salt Lake Hardware Company, Salt Lake City, Utah, 130-horsepower gasoline; the Hallidie Machinery Company, Seattle, Wash., 300-horsepower producer gas engine, and the Crown Pipe and Foundry Company, Jackson, O., one 110 and one 70-horsepower on natural gas.

The Inter-State Equipment and Engineering Company, whose offices are in the Old Colony Building, and whose special bulletin will be found in our classified columns, report a good demand for all kinds of machinery. They have sold to the Southern Pacific Railroad Company a complete portable crushing plant for immediate shipment to Mojave, Cal.

The Huntsville Wood Fiber Plaster and Lime Company, a new corporation organized at Huntsville, W. Va., with a capital stock of \$25,000, has taken a long-time lease on ground near the Nashville, Chattanooga and St. Louis Railway freight station as a site for its plant. A contract for the erection of necessary buildings has been awarded to A. M. Booth.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion 25 cents a line
For two insertions 50 cents a line
For three insertions 60 cents a line

Eight words of ordinary length make one line. Heading counts as two lines.

No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copies of paper containing the advertisement.

EMPLOYEES WANTED

GOOD CEMENT SALESMAN

Wanted who is earning a good salary, to sell cement in Western territory. Address
UNION PORTLAND CEMENT CO., Ogden, Utah.

EXPERIENCED QUARRY CONTRACTOR

Wanted to handle a large railroad crushed ballast contract. Fine plant now running, owners have other interests; good opportunity for right man. Address
"BOX 155," care ROCK PRODUCTS.

FIFTY QUARRYMEN WANTED.

Wages \$1.54 per day, with board and lodging. Excellent locality.

JAMESON LIME CO., Tehachapi, Cal.

SUPERINTENDENT WANTED.

Thoroughly experienced and competent superintendent for hard wall plaster mill; one who can invest from \$5,000 to \$10,000. Excellent opportunity for right party. Address
"BOX 132," care ROCK PRODUCTS.

SUPERINTENDENT WANTED

For plaster mill in the West; competent man, able to handle men in mill and quarry; experienced in calcining and the mixing of stucco. Give references and salary expected. Address "BOX 142," care ROCK PRODUCTS.

WANTED.

A man of intelligence and experience to take charge of a battery of continuous lime kilns: new; oil fuel. Address
WESTERN CALCIUM COMPANY,
430 California St., San Francisco, Cal.

EMPLOYMENT WANTED

SITUATION WANTED

By competent builders' supplies salesman with practical experience in lime, hydrated lime and wall plaster. Address
"BOX 166," care ROCK PRODUCTS.

YOUNG CEMENT CHEMIST

Technical graduate, desires position in cement plant. Address
G. F. RORR,
75 Hill St., Battle Creek, Mich.

PLASTER MILL SUPERINTENDENT

Wants position. Thoroughly familiar with every detail of the business. References. Address
"BOX 133," care ROCK PRODUCTS.

WANTED.

Position as traveling salesman, either lime, wall plaster or cement. An practical man, have had several years of road work. A hustler. A No. 1 reference. Address
"BOX 130," care ROCK PRODUCTS.

CEMENT MILL MANAGER OR SUPT.

Open for engagement. A mechanical engineer with 12 years' experience in the care and management of cement plants. Thoroughly competent. Highest references as to character and ability. Address
"BOX 131," care ROCK PRODUCTS.

BUSINESS OPPORTUNITIES

A GREAT CHANCE

For an experienced business man fully posted on the sewer pipe or fireproofing business to get a controlling interest in a first-class modern factory located near a large city, and having abundant supply of raw materials, coal, fire-clay and natural gas—all adjoining plant. The present owners are looking for a practical man who could take the position of president or general manager, and operate the business. A very attractive offer will be made to a man of ability and experience who has from \$30,000 to \$40,000 to invest. Address
WALTER K. HOOD, 421 Wood St., Pittsburg, Pa.

WANTED—WORKING PARTNER

With some capital, to engage in cement products manufacturing in central Virginia. Stone abundant; control of large sand and gravel deposits, one mile from depot, convenient to Charlottesville, Gordonsville, Lynchburg, Richmond, Va., and Washington, D. C. Healthfulness of location phenomenally good. Good schools convenient. C. E. JONES, Carysbrook, Va.

BUSINESS WANTED.

I can sell any business or real estate that is salable, no matter where located. I reach the people who buy. A trial will convince you. Established 1881. If you want to buy or sell address
FRANK P. CLEVELAND, Real Estate Broker,
4945 Adams Express Bldg., Chicago, Ill.

Or will join with proper parties in erecting brick or sewer pipe plant on a 60-acre tract of the best clay and shale lands in the state of Illinois. Shale will make sewer pipe paving 15 feet thick. From 60 to 80 feet of shale and from 8 to 15 feet of the very best Illinois fire clay. Rate 60c to Chicago. Will have Iowa, Wisconsin, northern Indiana and Illinois for market.

Address "BOX 444," care ROCK PRODUCTS.

Man who wants to come South with \$5,000 to invest. One with mechanical knowledge of quarrying and building preferred. First class opportunity. Address ATLANTA CONCRETE MACHINERY CO., Atlanta, Ga.

Huntsville, Ala.

INTER-STATE EQUIPMENT & ENGINEERING CO.,
Old Colony Building, Chicago.

THE RANDLE MACHINERY CO.,
1745 Powers St., Cincinnati, Oh.

New 9x14 Vulcan dinkies at.....	2,500.00
New 10x16 Vulcan dinkies at.....	3,000.00
New 1-yd. clam shell bucket (fine sand).....	375.00
Rockers 7 ft. wide, complete.....	800.00
Little Giant 1 1/2-yd. traction shovel.....	3,250.00
No. 2 Smlth mixer, engine and boiler on wheels.....	675.00
Marion Model 60 shovel (new).....	9,400.00
Bucyrus 70-ton shovel (new).....	9,900.00
New 10-ton American Tandem roller.....	1,500.00
34x54x16-ft. stone planer.....	950.00
Gates No. 5 gyratory crusher.....	850.00
Sullivan channelling machine (new).....	1,900.00
6x10 Vilter belted compressor, 34-ft.....	110.00
12x12x14 Hail air compressor.....	650.00
12x12x14 Ingersoll compressor.....	725.00
Morris No. 10 D. C. pump and engine.....	500.00
Channon full-circle 1 1/2-yd. excavator.....	4,000.00

Let me have your inquiries for Cableways, Cars, Rail, Rocker Drills, Channellers, Traction Engines, Graders and Contractors' Equipment generally.

WILLIS SHAW, 171 La Salle St., Chicago, Ill.

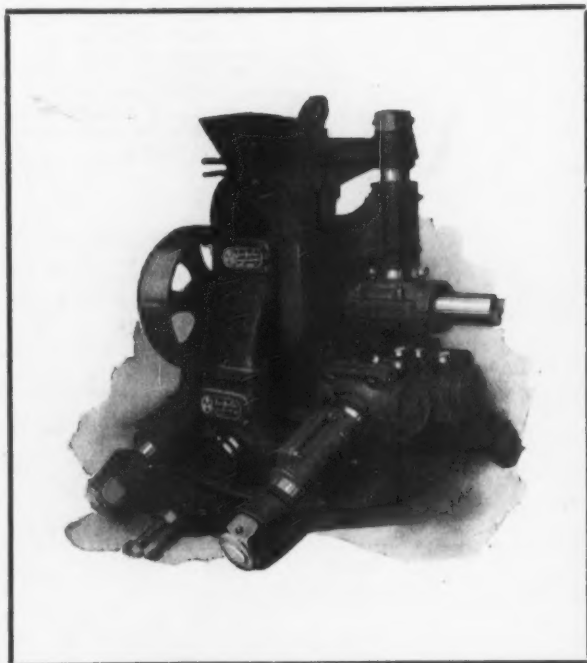
For the right parties. Never before offered to the public. Seven acres land, large marble quarries, 2 large buildings, 3 lime kilns, capacity 30 tons per day, 2 boilers, engine. Mills with output 25 tons per day, marble dust, Private rail track and pump. Plenty water. Highest class artificial ornamental stone is made of this material by others—why not you? A fine hydrate lime proposition. Plant now in operation with fair established trade. The present owner is a large real estate man and is not interested in the possibilities of this line.

Think of this—only 15 miles from the heart of New York City—54 trains per day. This is certainly the lime man's chance, especially the western man. Address SUPERINTENDENT, BOX 512, Tuckahoe, N. Y.

Taylor Iron & Steel Co.....	8
Throop, A. T.....	18
Union Mining Co.....	1
U. S. Drying Engineering Co.....	12
United Cement Machinery Co.....	64
United States Gypsum Co.....	68
United States Silica Co.....	35
Universal Portland Cement Co.....	2
Urschel Bates Valve Bag Co.....	53
Vulcan Iron Works.....	1
Vulcanite Portl'nd Cement Co.....	4
Warner, Charles, Co.....	2
West Jersey Bag Co.....	35
Wheeling Wall Plaster Co.....	36
Whitehall Portl'nd Cement Co.....	38
Williams, J. K., & Co.....	18
Williams' Patent Crusher & Pulverizer Co.....	50
Woodyville White Lime Co.....	13

THE KENT PULVERIZER

Takes one inch feed. Grinds to any fineness
from 10 to 200 mesh.



GRINDS PER HOUR WITH LESS THAN 25 H. P.

CEMENT CLINKER,	40 bbls.	to 98%	20 Mesh.
CEMENT CLINKER,	12 "	" "	100 "
LIMESTONE,	2½ tons	" "	200 "
LIME,	4 "	" "	100 "
ROSENDALE CEMENT,	43 bbls.	" 90%	50 "
QUARTZ TRAP-ROCK,	4 tons	" "	40 "

You can easily figure from this what a
Kent Mill would save for you.

W. J. BELL, Esq. Supt.
NEWAYGO PORTLAND CEMENT CO.,
Newaygo, Mich.

Says:—Four KENT MILLS are driven by one 75 H. P. motor.

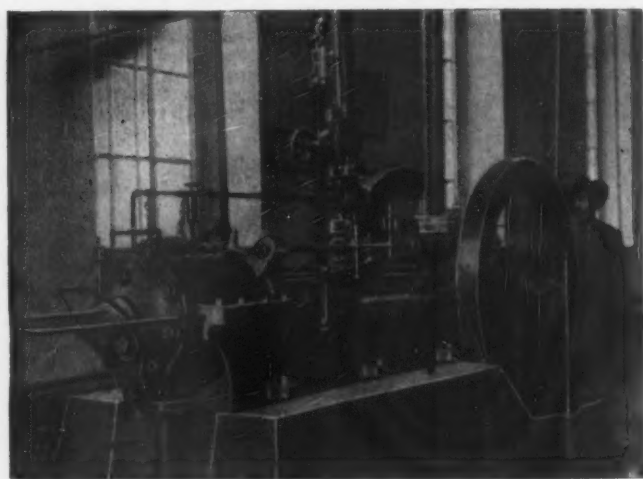
For Catalogs and Information, Address

KENT MILL CO.

170 Broadway, NEW YORK.

The Concrete Interests of this country have a champion that is accomplishing many progressive measures. Those who read ROCK PRODUCTS lead the procession. It costs but a dollar bill for a whole year.

STRAIGHT LINE "A-1" AIR COMPRESSORS



Class "A-1" Air Compressor in the Hueyapam Quarries, Otumba, Mex.

This is distinctly the machine for quarry work, which demands a compressor of moderate capacity, reasonable in first cost, economical in operation, durable under hard service, cheaply maintained and capable of management by unskilled attendants. Capacities range from 175 to 1900 cu. feet per minute.

Careful tests on machines of all classes show that Class "A-1" Compressors have a higher efficiency—and therefore a better fuel economy than any mechanical valve two-stage straight line type.

These tests are reported in detail in Catalog A-36, sent on request to all inquirers.

ROCK DRILLS CHANNELERS HAMMER DRILLS

INGERSOLL-RAND CO.

Chicago	Philadelphia	11 Broadway	St. Louis	El Paso
Cleveland	Houghton	NEW YORK	Pittsburg	Boston
Seattle	San Francisco	Butte	Salt Lake	Birmingham
				Denver





**Peirce
City
White
Lime**



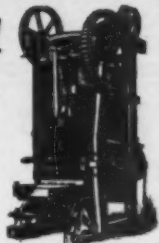
Clay Working Machinery

Yard Supplies of all Kinds



Steam or
Animal Power
Brick
Machinery

**CEMENT MIXERS
ELEVATORS
CONVEYORS
DRY PANS
CRUSHERS
BARROWS AND
TRUCKS**

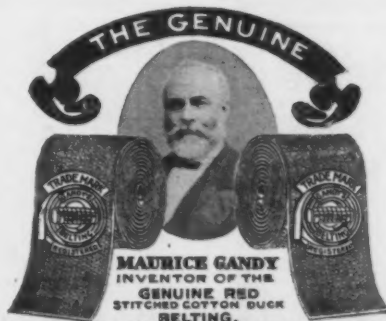


"MARTIN"
DRAWER 887
LANCASTER, PA.

Farrington Expansion Bolts



The most secure fastening in concrete as well as in stone.
Send for samples. H. Farrington, 45 Broadway, New York.



GANDY
PATENTED 1877

The Stone-Worker's Belting

would be an appropriate name for the Gandy because it certainly has been a friend to them. The sand and grit that wears a leather belt down to a shoe string in a few months seems only to toughen a Gandy. Then too, they cost only about one third as much as leather, so that it means a big saving in a year's time. Send for our booklet—

"Experiences with Gandy"—It's Interesting.

THE GANDY BELTING CO.
BALTIMORE, MD.

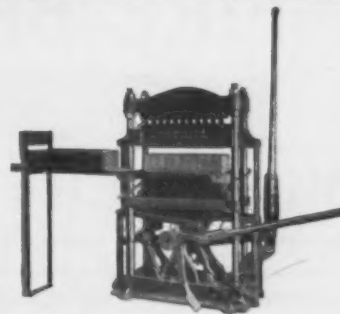
W. D. MEYER,

Manufacturer of

Marble White Lime

115 Delaware Street, QUINCY, ILL.

THE HELM BRICK PRESS



Has no competitor when price and quality of product are considered.

One-half barrel of cement saved in a thousand brick by pressing a wet mix, making true concrete and securing complete crystallization, requiring less labor in curing.

10,000 Pressed Brick or 2,000 two-piece blocks, 2,000 one-piece blocks.

Our guarantee and liberal offer furnished in booklet S-A, complete equipment for brick and block plants.

HELM BRICK MACHINE CO., Traverse City, Mich.
(State Bank Bldg.)

THE CAPPON PROCESS

(CALCIUM CHLORIDE SYSTEM)
FOR MAKING

Hard Plaster, Artificial Stone and Marble, Etc.

Without the use of gypsum, is of interest to all lime manufacturers

THOMAS W. CAPPON, Patentee

No. 881 E. 141 Street

NEW YORK

Flint Pebbles and Buhr Stone
Linings.

French Buhr Mill Stones,
Solids and Built.

J. M. Charles,
Sole Agent.

59 Pearl St., NEW YORK, N. Y.

Bolting Cloths, Dufour Swiss
Silk, Fine Wire Cloth.

Mixing and Sifting
Machinery.

"If it is **BAGS** We'll make them"

FOR LIME, CEMENT
PLASTER AND FEED

IN VALVE OR OPEN MOUTH

The Urschel-Bates Valve Bag Co.
TOLEDO, OHIO

THE FULLER ENGINEERING COMPANY

DESIGNING AND CONSTRUCTING ENGINEERS

Cement Plants a Specialty

REPORTS, EXAMINATIONS AND ANALYSES ON RAW MATERIAL FOR CEMENT

WORKS: FULLERTON, PA.

CONSULTATIONS
SOLICITED

OFFICES: ALLENTOWN, PA.

Hand Made — Hard Burnt FIRE BRICK

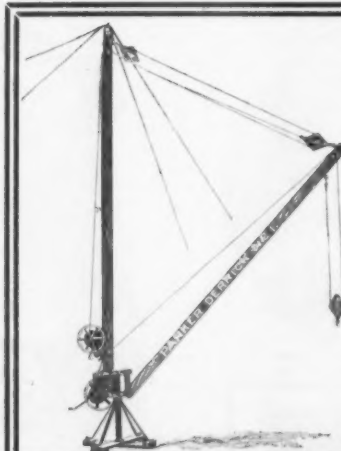
— are the best for —
Lime and Cement Kilns

ADDRESS
Mitchell Clay Mfg. Co.

ALL SHAPES

St. Louis, Mo.

CATALOG



3000 PARKER Patented Derricks

For Light Lifting Now in Use
CAPACITY 1500 AND 4000

Catalogue Free

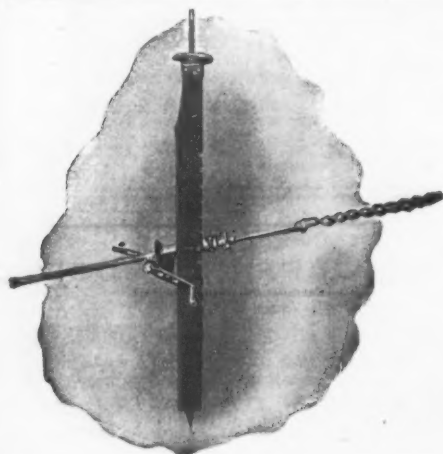
Engines, Derricks, Cranes and
Hoists

**Parker Hoist &
Machine Co.**

Engineers, Designers and Manufacturers

957 N. Francisco Ave.

CHICAGO



HOWELL'S Celebrated Ball Bearing Heavy Geared Post Drills

for boring anything that
an Auger will penetrate.

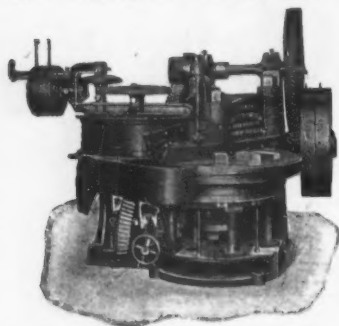
Awarded Gold Medal, St. Louis.

We make 40 different styles machines run by Hand, Compressed Air
and Electricity for boring Fire Clay, Coal, Rock, Rock Salt, Gypsum
and Plaster Rock. Send to day for our handsomely Illustrated Catalogue.

HOWELL MINING DRILL CO., Plymouth, Pa. U. S. A.

(ESTABLISHED 1878.)

The American Sandstone Brick Machinery Company, SAGINAW, MICH.



Improved Saginaw Rotary Presses are now being built right or left hand, with extra table for making face and fancy brick, on which double pressure is exerted. Our patented brush does the work of one man, and keeps the plunger plates clean.

DON'T confuse our practical system with the so-called Scientific Systems. We confine ourselves to the manufacture of machinery for making brick from sand and lime; installing the complete plant, starting and operating at our expense until at least 100,000 brick are made before asking for a settlement.

Our Plants are installed under the supervision of practical engineers who know how Sand-Lime Brick should be made, and can be made.

We have practical plants running successfully, to show to prospective investors.

We are Not Scientists.

We produce results, because we are the oldest practical Sand-Lime engineering company doing business in the United States, and we defy contradiction. Incorporated April 1902.

PATENTS

C. L. PARKER,

Attorney-at-Law and Solicitor of Patents

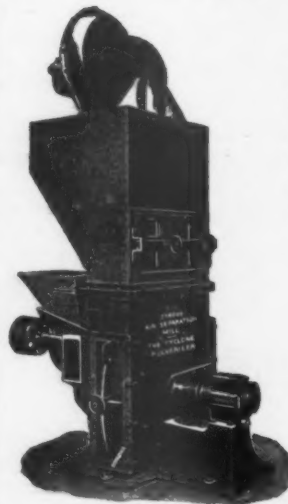
146 Deitz Bldg., Washington, D. C.

Patents secured promptly. Trade Marks registered. Reports rendered as to patentability, validity and infringement. Hand Book for inventors sent free upon request.

The STROUD MILLS

OUTDO ALL OTHERS

In quality of grinding and in output per horse-power per hour on most kinds of work, and they grind for less money per ton.



Our Air Separation Pulverizers produce direct from mill, any desired mesh, from say 40x40 down to the most impalpable powders, at will of operator, at a moment's notice. Dustless in operation.

Do away with sieving entirely.

We build Screen Separation Mills too.

Catalogue on request.

E. H. STROUD & CO.

ENGINEERS & MANUFACTURERS

30-36 LaSalle Street,

CHICAGO, U. S. A.

HERE IT IS

The All Steel Wheelbarrow for Feeding
Power Driven Concrete Mixing Machines
Has Not a Single Rival on the Market



SEND FOR A CATALOG

Manufactured by

**The Ohio Steel Wheelbarrow
Company**

No. 25-35 SOUTH ST. CLAIR STREET
TOLEDO, OHIO, U. S. A.

Modern Grinding Machinery

KOMINUTERS for granulating
TUBEMILLS for pulverizing

Davidson Tubemill especially
adapted for Sand-Lime
Brick Work.

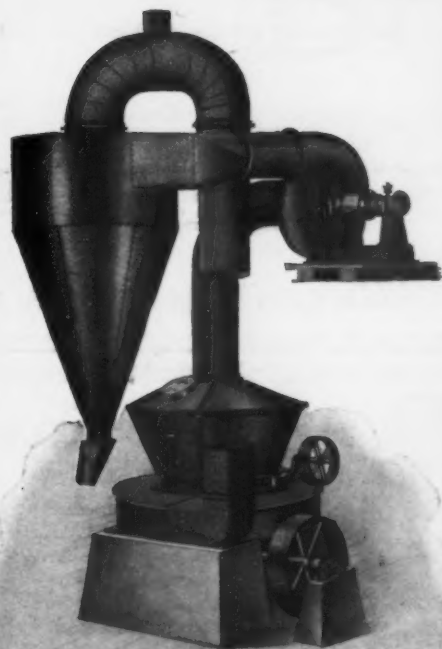
Silex Linings for Tubemills
Best Quality Dana Flint Pebbles
Forged Steel Balls

F. L. SMIDTH & CO.

ENGINEERS

41 Cortlandt St.,

NEW YORK



IF YOU GRIND ANY MATERIAL IN YOUR
MILL OR FACTORY

YOU NEED THIS BOOK

It explains the principle which has revolutionized
modern methods of grinding and
separating

THE RAYMOND SYSTEM OF AIR SEPARATION

IT EXPLAINS How air which is *free* does the work of bolters, which are *costly*.
How you can get a *finer* product than is possible by any other
method.

How you eliminate waste by dust and tailings, and thereby secure large
savings in raw material used.

How one Raymond Mill does the work of three or four other machines,
required as auxiliaries, in other methods.

How *we*, through long years of experience and conquering of new
problems, solve *your* pulverizing difficulties for you and *save*
you money.

It shows how you can make your grinding and pulverizing room the
cleanest, best aired part of your factory instead of a dustladen,
dirty, lung-choking, man-killing department.

RAYMOND BROTHERS

Impact Pulverizer Co.

141 LAFLIN STREET :: :: CHICAGO



SIGN THIS COUPON, TEAR OFF AND MAIL

RAYMOND
BROTHERS
IMPACT
PULVERIZER
CO.
141 Laflin St.,
Chicago

Please send your book

"MAKING AIR MAKE MONEY"

Name _____

Firm _____

Address _____

THE BOOK COSTS YOU NOTHING. WRITE FOR IT.

Tell 'em you saw it in ROCK PRODUCTS.

PULVERIZED FUEL COMBUSTION IN CEMENT MAKING

THE conditions required for the development of the highest efficiency in the burning of coal are—the complete oxidation of each carbon particle to CO_2 and the absence of any excess of air over 150 cubic feet per pound of carbon.

To reach this efficiency it is essential that the supply of air necessary for the combustion of each carbon particle shall surround it and shall have free access to its surface.

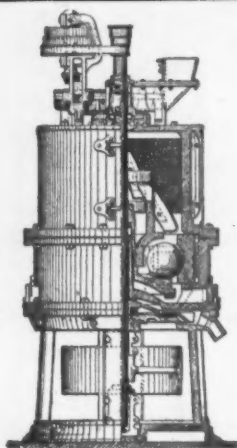
The Aero Pulverizer receives any grade of coal, grinds it to an impalpable powder, intimately mixes the powder with the amount of air theoretically required for perfect combustion and delivers the mixture to the furnace, where smokeless combustion at the highest efficiency results.

Coals containing an ordinary amount of moisture can be handled by the Aero without previous drying.

An entire pulverizing plant is concentrated in one machine, saving in investment, space required and power consumed.

SEND FOR BULLETIN 10.

THE AERO PULVERIZER CO., 82 Wall Street,
NEW YORK.



Fuller-Lehigh Pulverizer Mill The Best Pulverizing Mill Manufactured

Exhaustive tests in all departments, in competition with the most approved grinding machines in use, have demonstrated the superiority of our machine

OUR CLAIMS:

Greater Output

Better Fineness

Fewer Repairs

Dustless

Few extracts from letters received from users

"With the four we are now ordering we will have in use 16 Fuller Mills in all, and I think you can hope to get orders from us within the very near future for quite as many more."

"We have to say for your Fuller Mill that it is unqualifiedly the best grinding device we have ever tried on our lime rock and eminently satisfactory to us."

"We are pulverizing with one Ball Mill and four Fuller Mills sufficient raw material to produce nearly 1200 barrels of clinkers per day, which record I believe can not be approached by any other mill on the market."

If interested, write us for further information

LEHIGH CAR, WHEEL & AXLE WORKS, CATASAUQUA, PA. U. S. A.



ROTARY DRYERS

WE MAKE THE LARGEST VARIETY IN THE WORLD. MORE THAN 200 NOW IN USE
NOW USED IN THE GOV. COAL TESTING PLANT. GOLD MEDAL AT ST. LOUIS.
THE C.O. BARTLETT & SNOW CO. CLEVELAND OHIO U.S.A.



A Pacific Coast

customer writes as follows:

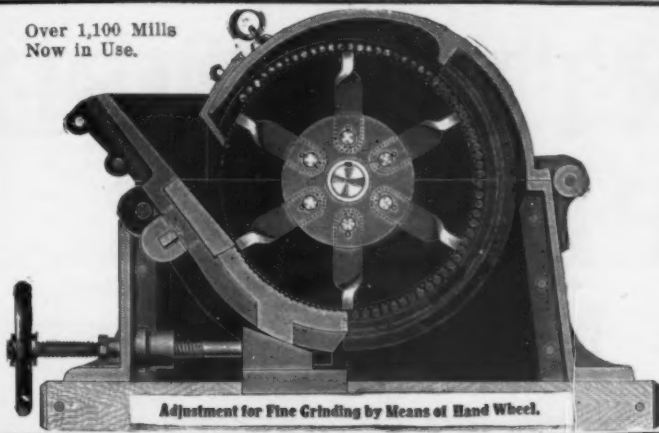
"We are greatly pleased with your work on the gears you have made for us and shall take pleasure in sending you our order for the larger gears when we are ready for them."

We make prompt shipments
"If in a hurry, wire us."

R. D. Nuttall Company,
Pittsburg, Pa.

Tell 'em you saw it in ROCK PRODUCTS.

Over 1,100 Mills
Now in Use.



Adjustment for Fine Grinding by Means of Hand Wheel.

RAW MATERIAL Grinders

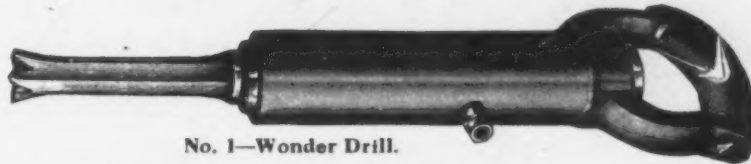
UNIVERSAL for Tube Mill Feed, 800 bbls. per day 20 mesh.
VULCANITE for $\frac{1}{2}$ in., $\frac{3}{4}$ in. and $\frac{1}{2}$ in. work.
We also grind Lime, Gypsum, Coal, Etc.

Write for Bulletin No. 12.

The Williams Pat. Crusher & Pulverizer Co.,
Old Colony Building, CHICAGO.

DON'T TAKE OUR WORD FOR IT BUT THOROLY TRY A

WONDER ROCK DRILLING OUTFIT



No. 1—Wonder Drill.

AND SEE IF YOU ARE NOT HIGHLY PLEASED AS HUNDREDS OF OTHERS ARE.

WRITE FOR DESCRIPTIVE CATALOG

Hardsocg Wonder Drill Co.

Ottumwa, Iowa, U. S. A.

“Brownhoist” Locomotive Crane

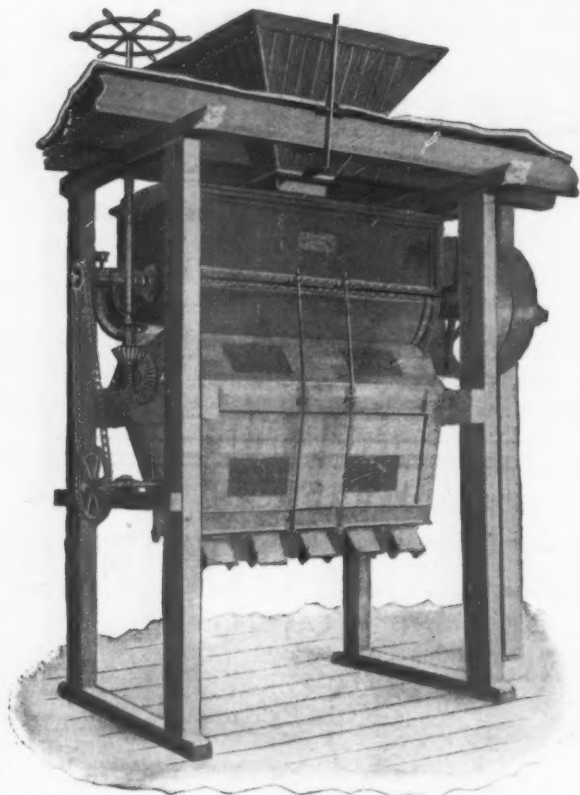
Equipped with clam-shell loading bucket offers the greatest capacity as well as economy for handling sand and gravel in the pit. Crushed stone and screenings loaded and rehandled at minimum cost.

Advance Your Profits by Increasing the Output.

The Brown Hoisting Machinery Co.,

CLEVELAND, OHIO

Tell 'em you saw it in ROCK PRODUCTS.



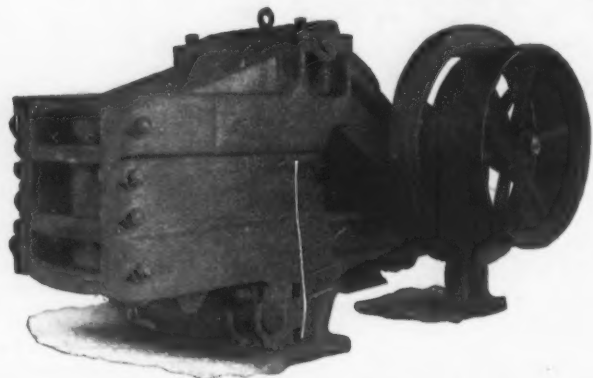
ENTERPRISE PLASTER MIXER

NOISELESS,
DURABLE and EFFICIENT.

For Mixing Hair Fibre, Wood Fibre and
Retarder with Dry Plastering
Materials.

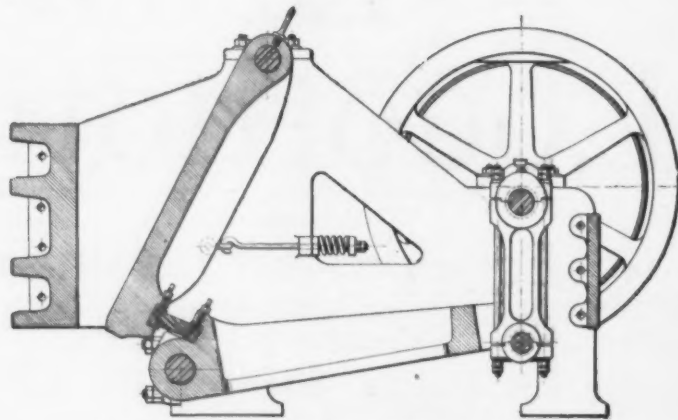
Calcining Kettles

Jaw and Rotary Crushers for Gypsum, Reels,
Vibratory Screens, Hair Pickers and Trans-
mission for applying power.



EHRSAM NO. 4 JAW CRUSHER.

This machine will handle large chunks and reduce from 30 to 40 tons
of Gypsum per hour to 2 1/4-inch maximum or smaller if wanted.



NO. 4 JAW CRUSHER, SHOWING SECTIONAL VIEW OF NIPPER.
The jaw opening at inlet is 18x28 inches.

The J. B. Ehrsam & Sons Mfg. Co.,

BUILDERS OF

COMPLETE EQUIPMENTS FOR PLASTER MILLS

Enterprise, Kansas

CONCRETE BUILDINGS

We make the Hercules Concrete Block Machine in two sizes.

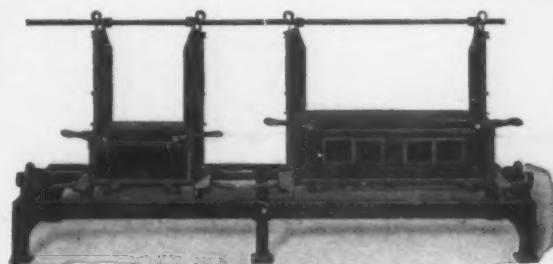
THE HERCULES REGULAR

will make blocks from two inches up to six feet; it will make water tables, steps, window sills, lintels, etc., and make them as they should be made—as solid as the rock of Gibraltar.



MADE ON HERCULES

The Hercules Machines are making the blocks that are going into the finest concrete buildings in the world. We will be glad to send our catalog to any reader of this paper upon request.



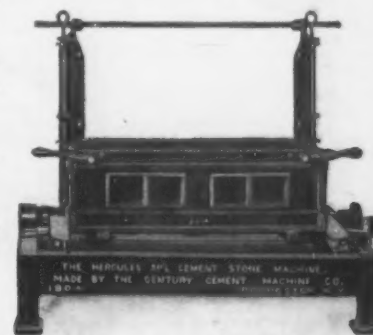
THE HERCULES REGULAR

THE HERCULES SPECIAL

is a smaller machine than the Hercules Regular, but it is built exactly on the same lines and its mechanical action is identical with the large machine.

The Hercules Special will make just as good blocks—just as handsome blocks—as the Hercules Regular, but it will not make as large a block—that's the only difference.

The Hercules Special with complete outfit for building houses, manufacturing establishments, or any buildings, costs but \$120.00.



HERCULES SPECIAL

CENTURY CEMENT MACHINE CO.

179 W. Main St., :: :: Rochester, N. Y.

Save 75 Per Cent. of the Cost by Using a

Pauly Concrete Wall Machine

Enormous Economy Guaranteed on Every Job when used for the Construction of Foundations, Basements, Cellars and Retaining Walls. Substantial Contractors are Invited to Investigate. Address Machinery Department.

CONCRETE STONE AND SAND COMPANY YOUNGSTOWN, OHIO

The Latest Concrete Development

Machines and System for Manufacturing Pauly Fireproof Pushed Tile, Perfected and Patented. Interested? Write Today.



Newsom Crushed Stone and Quarry Company,

MANUFACTURERS OF

Crushed Stone for Ballast, Concrete Work and Roadways,
also Concrete Hollow Building Blocks.

Sales Agents for Cement Block and Brick Machinery, Mixers,
Portland Cement, Etc.

NASHVILLE, TENNESSEE.

We have built in Nashville SIXTY HOUSES out of CEMENT BLOCK with ONE MAKE OF MACHINE, having used it in preference to ALL OTHERS,—knowing from ACTUAL WORK and EXPERIENCE that it is best suited to the work and MAKES EVERY SIZE, SHAPE and STYLE of blocks used in a building.

Write for Particulars of Our Various Lines.

Tell 'em you saw it in ROCK PRODUCTS.



RIGHTLY NAMED
—IS THE—
DEMOREST
Little
Giant
Mixer

That was the unanimous expression of unbiased opinion at the Chicago Convention—WHY? Let the following speak for itself and remember that the Batch Mixer referred to is one of the best known:

GRAND RAPIDS REFRIGERATOR COMPANY.

Ballou Manufacturing Co., Belding, Mich.

Grand Rapids, Mich., December 19, 1906.

Gentlemen:—We have been using one of your power mixers for the past month and will say that we are greatly pleased with its operation. We are using at the same time an \$800.00 machine with steam power. The latter is a batch mixer, and we notice every time the men get a little lazy, they don't put in as much gravel as they ought to, which increases the necessary portions of cement. We also notice that in the operation of the batch mixer, four or five laborers are frequently waiting for the batch to be mixed, thus much time is lost; while with your mixer we can load up the wheelbarrows as they come around.

We are also much pleased with the thoroughness with which the cement is mixed with the gravel. It is a perfect mixture and the proportion of cement and gravel can be regulated to a nicety. If purchasers only realized that your machine is more exact in proportion of gravel and cement than batch mixers as they are usually worked, we do not see why you should not sell all the machines that are needed. We also find a great economy in the fuel expense, the coal for the batch mixer costing \$1.00 a day and the gasoline only fifty cents a day. Another economy is in the cost of the engineer. The batch mixer calls for a man at \$2.50 a day to shovel coal and attend the engine. Your mixer requires no such expense. It also takes fewer men to shovel the gravel into the machine because they can work steadily, while with the batch mixer they have to wait until the batch is mixed and emptied every time. We figure the saving in labor and fuel at \$15 per day over the batch mixer, and they are running side by side, and your machine will make more concrete than the batch mixer.

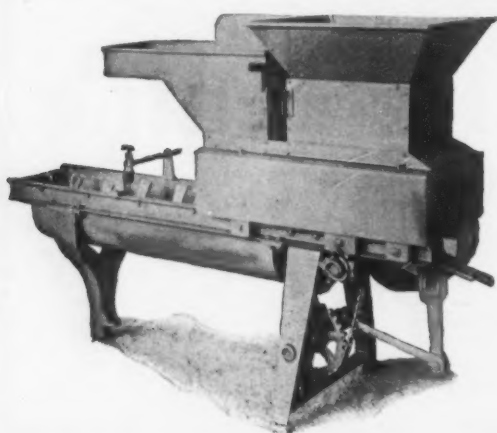
C. H. L.
H. D.

Very truly yours,

GRAND RAPIDS REFRIGERATOR CO.
(By C. H. Leonard.)

Do You want to
save that **\$15 a day?**
If so, write for booklet to

BALLOU MFG. CO. 35 High Street, Belding, Mich.



The Standard Continuous Concrete Mixer

"The Mixer that Measures and Mixes."

"You fill the Hoppers, the Mixer does the rest"

CONTINUOUS, AUTOMATIC, FEED EXACT PROPORTIONS.

Materials first Dry Mixed, then "Tempered." Output instantly variable from 0 to Maximum at will of operator, thus insuring Fresh Material for each Block. Feeds Sand and Gravel Dry or Wet.

Write for description and prices to

The Standard Machine Co.,
KENT, OHIO



Make Money

As others have already done it,
by making Cement Brick upon
a Peerless Brick Machine.

The Price is Right. The Brick are Right.

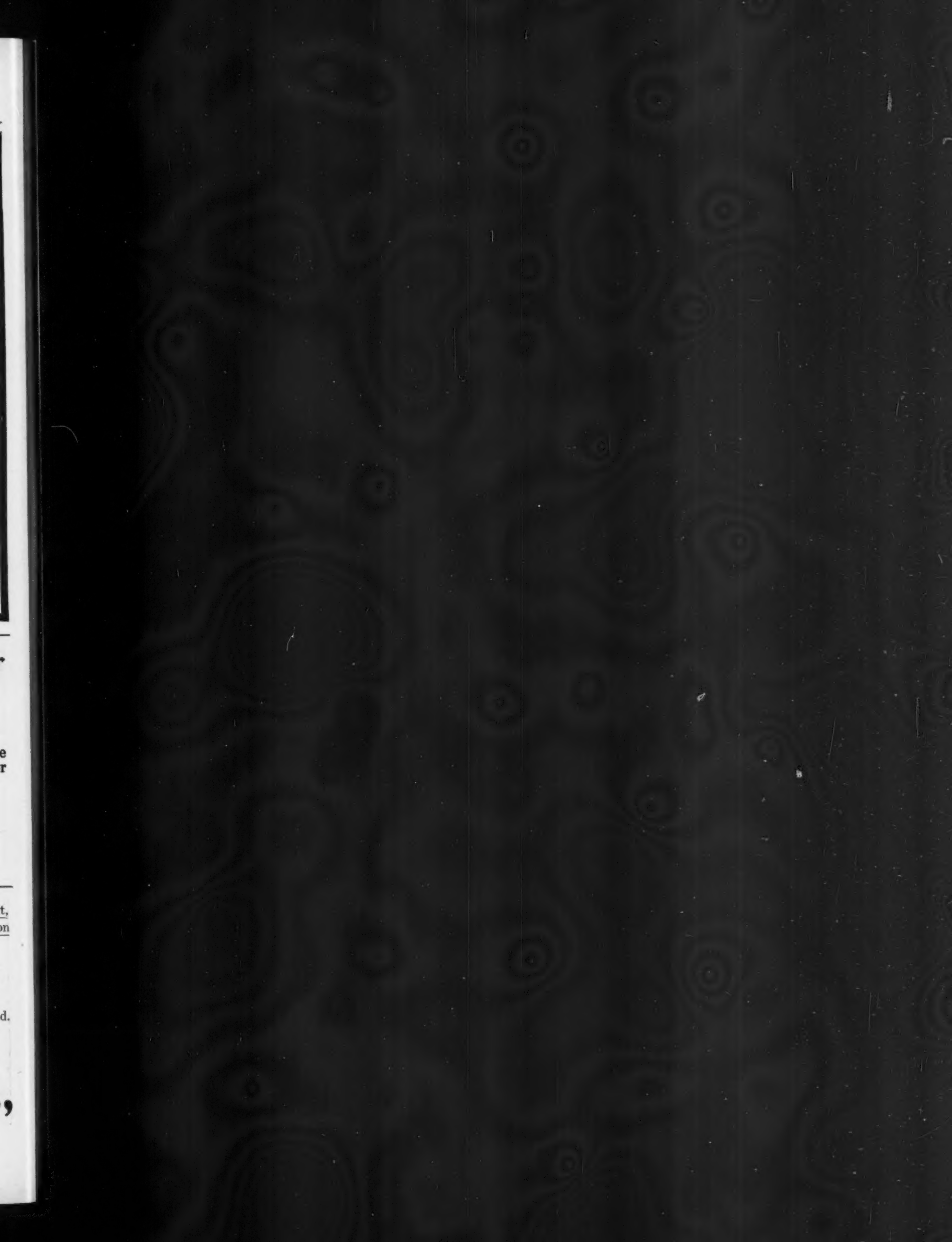
More Peerless Machines now in use producing a profit to the owners than all others combined.

WRITE FOR ILLUSTRATED CATALOGUE

Peerless Brick Machine Co.,

100 Lumber Exchange, MINNEAPOLIS, MINN.

Tell 'em you saw it in ROCK PRODUCTS.



.

,

e
r

t,
on

d.

,

The Recognized Leader the World Over!

"SMITH"



Smith Mixer on Truck with Steam Power.

The Montgomery Ward Building, Chicago, 750 feet long, 270 feet wide and 135 feet high, will be the

World's Largest Concrete Building

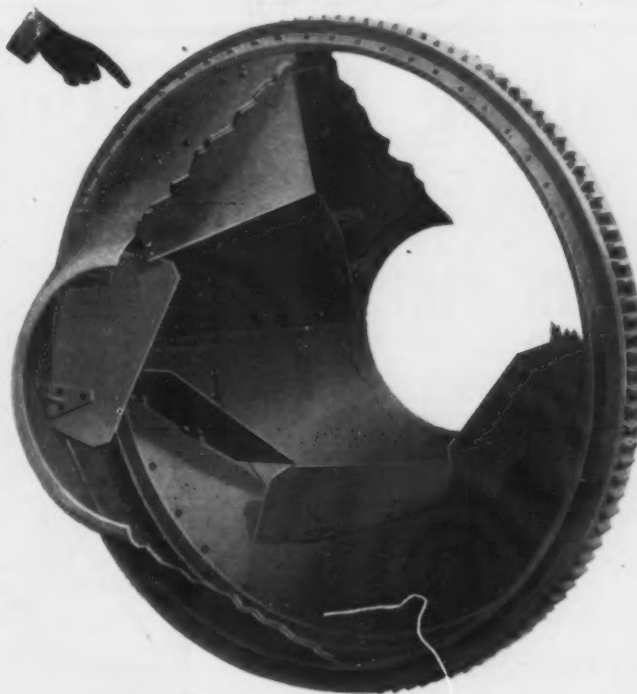
It will require in its construction 100,000 barrels of cement. The Architects, Messrs. Schmidt, Gardner & Martin, realizing the importance of a perfectly mixed concrete, wanted

The Best Mixer in the World

and, therefore, specified that the SMITH only be used in this mammoth contract. The SMITH is now on the ground, doing the work. ARCHITECTS who want to MAKE SURE should specify the Smith Mixer.

Study the Blades and you will know why.

The SMITH doesn't merely slide, push or roll the material to be mixed, but cuts it apart with blades, lifts it up, pours it from end to end of the mixing chamber and forces it back and forth by a positive mechanism, giving it the greatest possible longitudinal movement.



Interior View of the Smith Mixer.

The SMITH does quickly with large quantities what no other machine or process can do quite so well even with small quantities. It is the perfection of mixing apparatus—the **quickest, most efficient, most durable, and cheapest in the long run.**

Made in all required sizes and with any desired power equipment.

Send for illustrated catalogue. IT'S FREE.

CONTRACTORS' SUPPLY AND EQUIPMENT CO.

New York Office, 170 Broadway

Old Colony Building, Chicago

PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

Wet Process Face Down Damp Curing

The **PETTYJOHN INVINCIBLE** Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincibles, \$35.00 and up. With our **Triple Tier Racking System** green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—**FREE**.

THE PETTYJOHN COMPANY

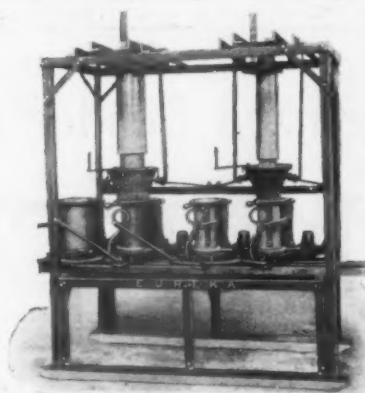
614 North Sixth Street Terre Haute, Indiana

In our Warerooms of 33,000 Square Feet Area, we carry 40 different kinds of machines used in the Concrete Block Industry and Associated Work. We have Hollow Block Machines from \$21.00 up, the prices varying according to the outfit and grade. They include the most perfect machines ever produced. Our several types of Concrete Mixers are the best that money will buy.

OUR OFFER:—In order that you may carefully examine our complete lines and choose just what you want, we will gladly pay your railroad expenses and practically operate any or all of the machines in our demonstrating department, then if we cannot satisfy you fully as to their merit and price we will pay your fares just the same. Or, if you purchase a machine direct we will send a practical demonstrator to start your plant. Write us today for our 80 page Catalog. Department C.

The United Cement Machinery Manufacturing Co.

Maple and Front Streets COLUMBUS, OHIO



The Automatic Tamper Tile Machine

makes a perfect cement drain tile—very fast and very cheap. Tamps one or two tiles automatically in ten seconds. No pallets required. When the finished tile swings out, another mold and core swings into place. Absolutely automatic and labor-saving without the necessity of an expensive power plant.

Let us send you our free printed matter, which gives details of this

BIG MONEY MAKER

The Eureka Sewer Tile Molds cost very little to put in, make perfect cement sewer tile, all sizes 6 inches to 36 inches. Yield big profits. Free booklet on request.

Our big instruction book gives full directions for the manufacture of cement blocks, bricks, sewer and drain tile and special cement products, shows many valuable labor-saving ideas. Lists the most complete line of cement machinery on the market. Price only 25 cents.

Besser Mfg. Co.

Makers of the most complete line of cement machinery on the market.

313 Second Street
Alpena, Mich.



Are You Waiting for an Opportunity?

HERE IT IS

PURCHASE A

SCHENK DRAIN TILE MACHINE

And get to making money. This is the only practical machine on the market. It is guaranteed to make 3000 Tile or Blocks per day with 5 men and a 10 Horse Power Engine to Run it.

Don't Waste Your Time Mixing

by hand. Get one of our

Perfection Concrete Mixers

and do it right. A positive feed and perfect mix. Write for further information to the



Cement Tile Machinery Co. Waterloo, Iowa

U. S. A.

Manufacturers and Dealers in All Kinds of CEMENT WORKING MACHINERY

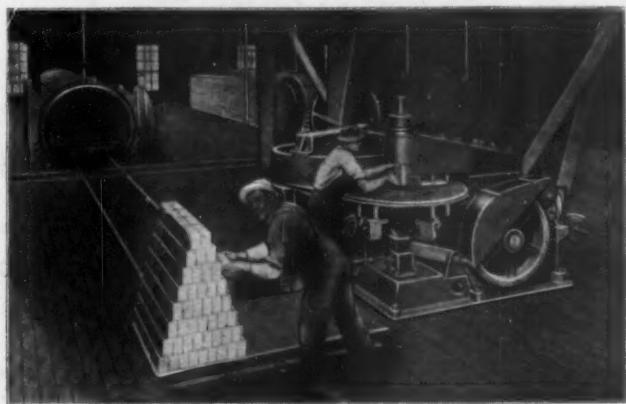
Tell 'em you saw it in ROCK PRODUCTS.

The Cleveland Brick Machinery Co.

Wickliffe, Ohio.

Manufacturers of

Sand Lime Brick Machinery Only



We claim to have the finest Sand Lime Brick Press that has yet been brought out, and we are sure we can convince you if you will see our machinery in operation.

Designers and Builders of Sand Lime Brick Plants.

The First That Has Come up to Its Advertising

A MESSAGE FROM TEXAS

Corpus Christi, Texas, Sept. 5, '07.

The Knickerbocker Co.

Jackson, Michigan.

Gentlemen:—The No. 6 Mixer was unloaded from car last Tuesday at 11 o'clock. At 1 o'clock of the same day we started Mixer without difficulty, and it perfectly mixed material as fast as two good men could shovel it. We have given the machine almost constant use since its arrival, and on different materials and different proportions, ranging from finest sand to the coarsest gravel, and in every case we have been more than pleased with the results.

We wish to state that this is the first of all machinery we have installed that has come up to its advertising.

Yours truly,

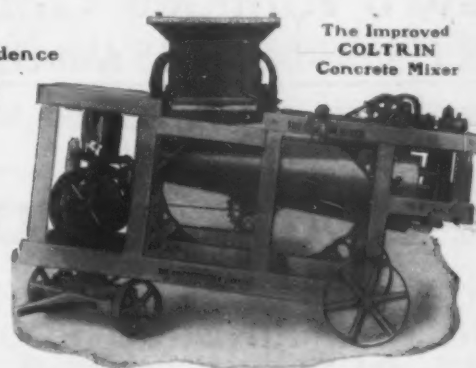
RING & POWELL.

For More Evidence

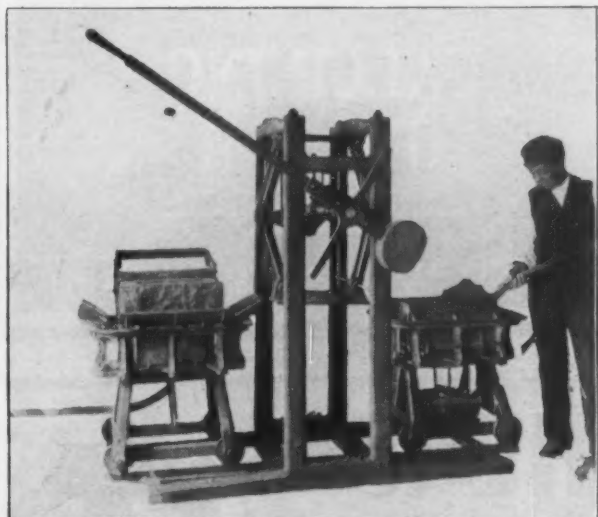
WRITE

The
Knickerbocker
Company,

JACKSON,
MICH.



Somers' Pressure Block Machine



You are looking for the machine that will make you the most money. Our sales are principally to persons who have started in the business and have learned just enough about the great possibilities of the block business to be convinced that if they can get a machine that is speedy and at the same time one that will make any block the architect may call for, their financial success is assured.

The Somers' Machine will do it. 3 cents saved in labor on every block because of its great speed. Two machines operated successfully under one Press, thereby doubling the capacity. Operated automatically by levers. More moderate in price than the common Hand Tamp outfits.

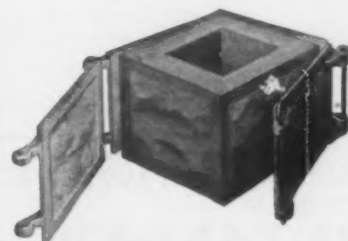
Write for our Catalogue and prices.

Somers Bros., Manufacturers

205 North Coler Ave., - Urbana, Ill.

Pier, Column and Chimney Moulds

THE BEST ROCK FACE DESIGNS



PRICES

10x10"\$3.50
12x12" 4.00
14x14" 4.50
16x16" 5.00
20x20" 6.00

Write for descriptive circular

W.E. DUNN & CO., 339 Grand Ave., Chicago, Ill.

40% Saved in Material and Labor

BY USING THE

Lightning Block Machine

AUTOMATIC SELF-LOCKING DOORS

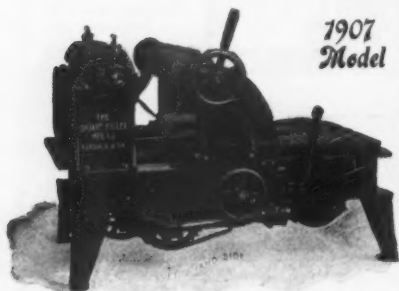
All working parts protected from dropping cement. FAST, CLEAN, SIMPLE, LABOR SAVING. Sold direct to you at an interesting price. Write me today for full particulars.

D. F. DETRICK

8 CANAL AND THIRD STS., :: :: DAYTON, OHIO

Tell 'em you saw it in ROCK PRODUCTS.

The Leonard Wood Fiber Machine



1907
Model

Has an Automatic, Proportional, Increasing Feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 90 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.

Successors to

**The Elyria Machine Works,
Elyria, Ohio**

THE SHUART-FULLER MFG. CO., ELYRIA, OHIO

Gentlemen:—What is the very best, cash-with-order price you will make on another Leonard Fiber Machine? We want no other machine but yours. It is all and more than you claimed for it, and is running steady ten hours every day and doing fine work.

Yours truly, GUARANTY WOOD FIBER PLASTER CO., Chattanooga, Tenn

Plaster! Plaster!

IOWA HARD PLASTER CO.



**HARD BY NAME
HARD BY NATURE
HARD TO BEAT
NOT HARD TO GET**



IOWA HARD PLASTER CO., Ft. Dodge, Iowa.

KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Buffalo Branch: **CHAS. C. CALKINS, Manager**
322 W. Genesee Street

Elastic in its nature, can be applied with 25 per cent. less labor and has 12½ per cent. more covering capacity than any other similar material.

J. B. KING & CO., No. 1 Broadway, New York

SPECIAL MACHINERY AND FORMULAS

FOR THE MANUFACTURE OF

**WOOD FIBER PLASTER, FIRE PROOF-
ING AND KINDRED PRODUCTS**

The Ohio Fiber Machinery Co.

We furnish the latest improved FIBER MACHINE, (fully patented), also FORMULAS, on a reasonable proposition. The strongest companies and oldest manufacturers are operating under my contract.

WRITE FOR TERRITORY.

**J. W. VOGLESONG,
GENERAL MANAGER.**

Elyria, Ohio.

The American Cement Plaster Co.

Make Plaster that Gives Satisfaction.

Try a car and be convinced

We have six mills and can always fill orders

Main Office: **Laurance, Kansas.**

The Sheridan Stucco Retarder Co. Toledo, O.

MANUFACTURERS OF

STUCCO RETARDER

Quality, Price, Shipping Facilities, and Prompt Attention, Unexcelled by any. Drop us a line for Prices.

CUMMER CONTINUOUS PROCESS

FOR

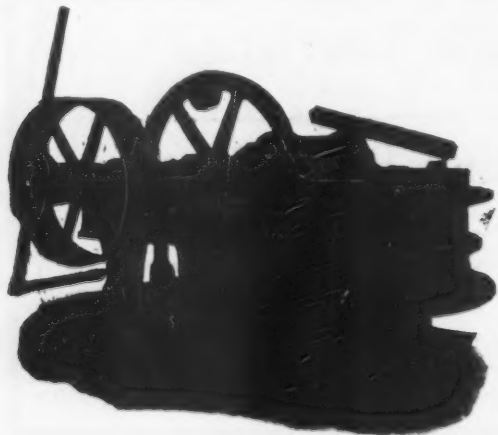
**CALCINING
GYPSUM**

NO KETTLES
USED

PLANTS IN
OPERATION

Great Saving in Cost of Manufacture and Quality of Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.



CRUSHERS

for soft rocks, burnt lime, etc.

GYPSUM MACHINERY.

We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhns, Screens, Elevators, Shafting etc.

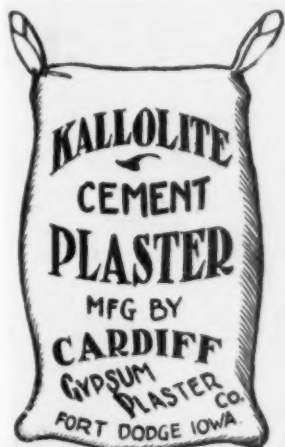
SPECIAL CRUSHER-GRINDERS FOR LIME HYDRATORS.

BUTTERWORTH & LOWE

17 Huron Street, GRAND RAPIDS, MICH.

Tell 'em you saw it in ROCK PRODUCTS.





KALLOLITE CEMENT PLASTER

IS MANUFACTURED FROM
THE PUREST GYPSUM ROCK
FOUND IN THE UNITED STATES
AS SHOWN BY GOVERNMENT
REPORT.

CARDIFF GYPSUM PLASTER CO.
MANUFACTURERS FORT DODGE, IOWA

The COLOR

That Never Fades.

Tried out for 20 years. For Mortar, Brick, Cement, Stone,
etc. Red, Brown, Buff, Purple and Black.

Richeston Mineral Paint Works,
MILWAUKEE, WIS.

Empire Gypsum Co.

The Empire Gypsum Company's new mill, with capacity of
200 tons daily, is in operation and they are prepared to
promptly furnish the best quality of Empire Stucco, Em-
pire Neat Plaster, Sterling Wood Fiber Wall Plaster and
Excelsior Wall Plaster Sanded.

Garbutt, Monroe County, New York.

H. L. Graf, Pres. E. T. Bilder, Vice-Pres. & Gen'l Mgr. Osborne G. Reilly, Sec. & Treas.

New Albany Wall Plaster Co. (Incorporated.)

MANUFACTURERS OF

Star and Wood Fiber Wall Plaster. NEW ALBANY, IND.

We wish to announce to the trade that we are now running and at the present time,
are in position to fill all orders promptly. Those who have used our goods claim it is the
finest they ever had.

If you have not tried it, we are sure it would be to your interest to do so.

Prices always right and your orders solicited.

NEW ALBANY WALL PLASTER CO.,

NEW ALBANY, IND.

Cumberland Phone 408.
Home Phone 137.

THAT'S IT



Cement Plaster
Wood Fiber Plaster

The Brand that's Made from Pure Gypsum Rock.

Correspondence Solicited.

MANUFACTURED BY

The Plymouth Gypsum Co.
FORT DODGE, IOWA

GET THE BEST

Finest Line of Gypsum Machinery

MADE

KETTLE CRUSHER NIPPERS

ASK FOR CATALOG OF

MOGUL NIPPERS. OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

DES MOINES MFG. & SUPPLY CO., Des Moines, Iowa, U. S. A.

Tell 'em you saw it in ROCK PRODUCTS.



for anything on the Material Dealer's Bill in Plastering Material—anything, from Lathing up to Finishing Plaster or Decorative Finishes—

Mark This:

The Service here is Excellent
 The Attention Courteous
 The Quality Prime
 The Preparation Perfect
 The Serving Prompt
 The Atmosphere Congenial
 The Prices Normal

We have catered to the Building Material Trade for nearly half a century with the Highest Class of Goods and with "The Square Deal" policy.

Get It Right

Dealers enjoy that comfortable sense of "getting things right" in handling United States Gypsum Company Products, and in putting them into the hands of the Builder and Contractor.

The Prestige of a House and the Reputation of its goods are Valuable Assets to any Dealer handling its products.

Co-operation—Advertising

This Prestige and Reputation are enhanced by the Advertising we do. We co-operate with our Dealers in pushing our Products—supply them with snappy, up-to-date Selling Literature for each Product and Brand; booklets, mailing cards, etc., for the Dealer's use, imprinted with his own advertisement. Our advertising matter is exceptionally strong, bright and attractive—replete with "ginger" and selling force—it makes business for the dealer.

United States Gypsum Company

Chicago

Cleveland

Minneapolis



FIREPROOF AND ECONOMICAL

SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theatres.

Walls and ceilings of Sackett Plaster Boards will be **DRY AND READY IN HALF THE TIME** required when lath is used, as less than half the quantity of water is needed.

Less moisture means less damage from warped and twisted trim and woodwork.

Their superior insulating qualities make warmer houses with less fuel. The first cost is no more than good work on wood lath, and less than on metal lath.

Sackett Plaster Board is an efficient and economical **FIREPROOFING**, not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

Sackett Plaster Board comes in sheets or slabs 32x36 inches ready to be nailed direct to the studding, furring or beams.

For all kinds of Buildings its use is ideal. It speeds construction; it lessens building cost; it reduces fixed charges for insurance; it makes fire resisting walls and ceilings, and gives absolute satisfaction.

Carried in stock by **up-to-date building material dealers** everywhere.

Booklet showing buildings all over the country where these boards have been successfully used with **SAMPLES** and name of nearest dealer furnished on application to any of the following General Distributors:

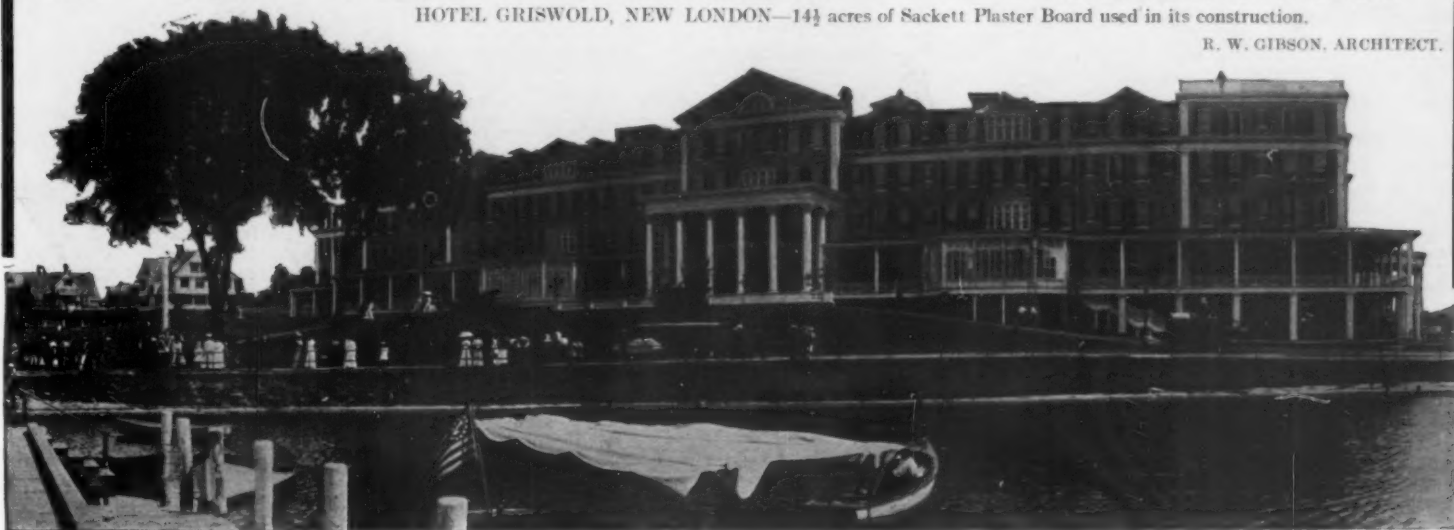
UNITED STATES GYPSUM CO.
CHICAGO CLEVELAND MINNEAPOLIS

GRAND RAPIDS PLASTER CO.
GRAND RAPIDS, MICH

SACKETT PLASTER BOARD CO.
17 BATTERY PLACE, NEW YORK CITY.

HOTEL GRISWOLD, NEW LONDON—14½ acres of Sackett Plaster Board used in its construction.

R. W. GIBSON, ARCHITECT.

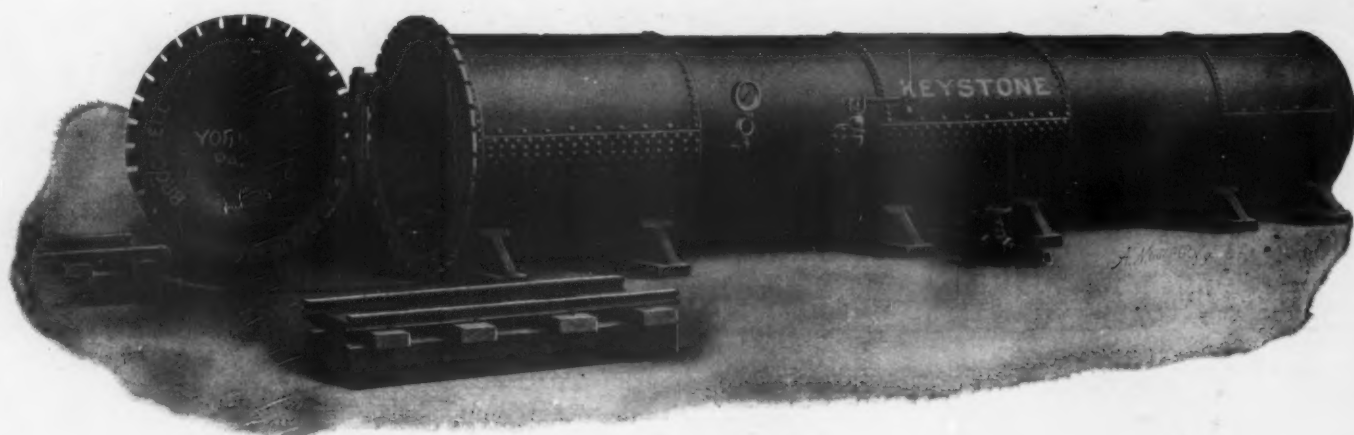


Tell 'em you saw it in **ROCK PRODUCTS**.

Sand=Lime Brick Hardening Cylinders

BINS, ELEVATORS, CARS, HYDRATING MACHINES.

SPECIAL WORK OF ANY KIND BUILT FROM BLUE PRINTS.



BROOMELL, SCHMIDT & STEACY CO., YORK, PA.

Sand=Lime Brick Machinery

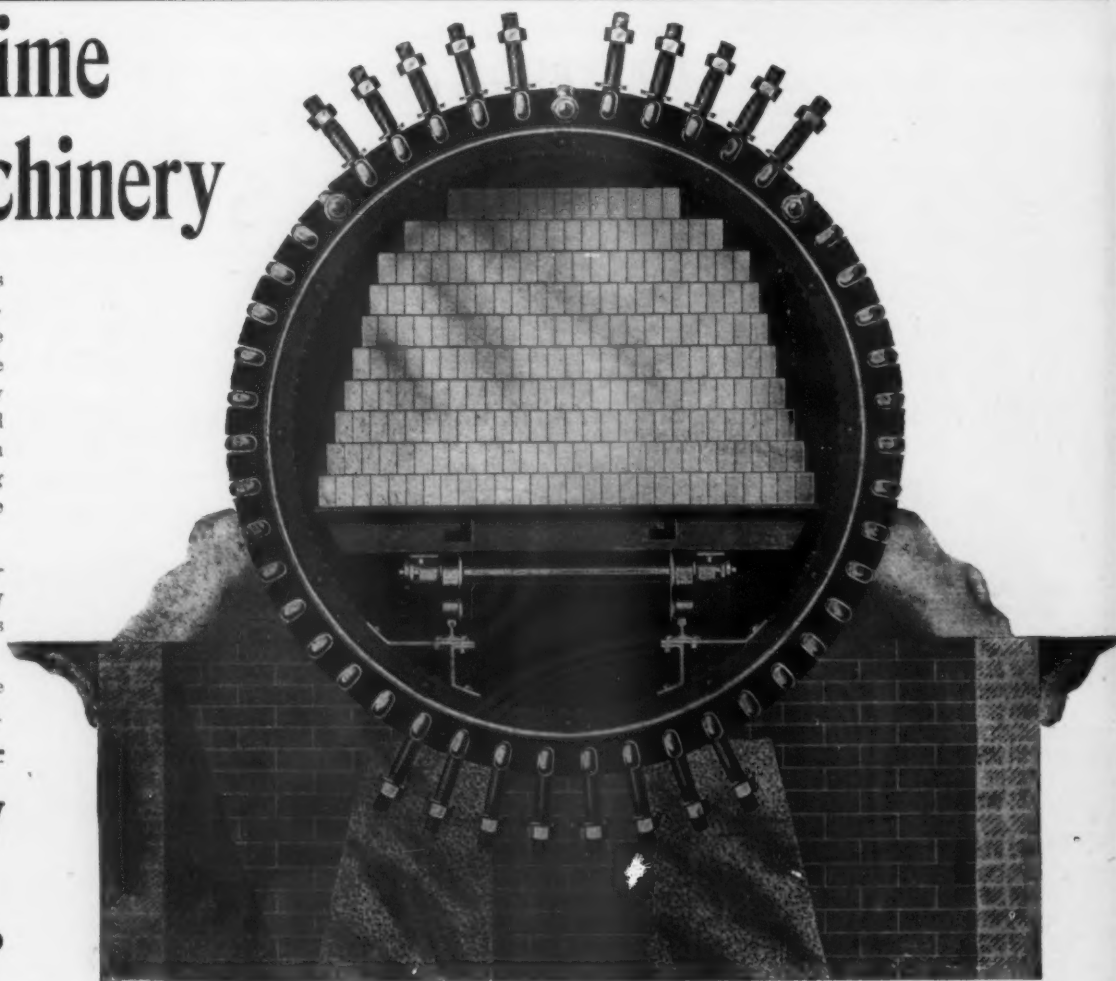
Our Sand=Lime Brick Machinery is at least a little better than any other. We have testimonials to show it. We build it all in our own factory and are sure of its quality. We are the only firm doing this. We will design and equip your entire plant or will sell you parts of your equipment. Our catalog describing and illustrating our full line will be sent upon request.

We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers and Dryer Apparatus.

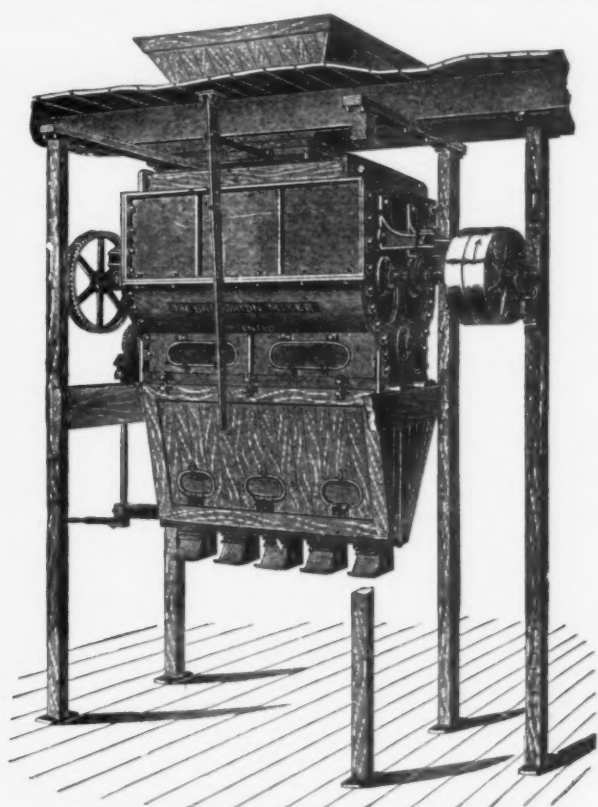
Everything we sell we make. We therefore know its quality to be right.

**The American Clay
Machinery Co.**

WILLOUGHBY, OHIO
U. S. A.



Tell 'em you saw it in ROCK PRODUCTS.



The most thorough and efficient
Mixers of Plaster, Cement and
Dry Materials. Send for Circular.

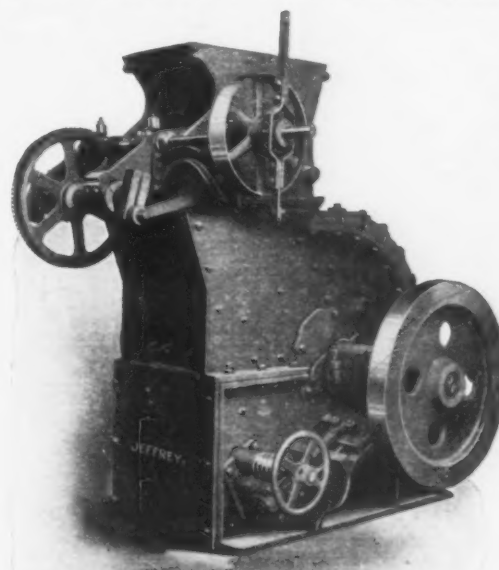
W. D. DUNNING, Water St., Syracuse, N. Y.

JEFFREY SWING HAMMER PULVERIZER

Equipped
with
Automatic
Feed,
Worm Gear
and
Screw
Lowering
Device.

Send for
Catalog
No. 31.

Free
Crushing
Tests.



THE JEFFREY MFG. COMPANY

Columbus, Ohio, U. S. A.

New York Chicago Boston St. Louis Denver Montreal



SAND- LIME BRICK

We have had more experience in
equipping, starting and operating SAND-
LIME BRICK PLANTS than any other
concern in this country, and we make
STRONGER GUARANTEES.

ALL MONEY REFUNDED if brick made in regular work are not equal to samples submitted. No risks
and no expensive experimenting under our method of installing plants. It is the **only safe method** for
beginners in any new industry. Our latest illustrated Booklet gives full particulars. Sent free.

Send for new book on "Uses of Sand-Lime Brick," just issued.

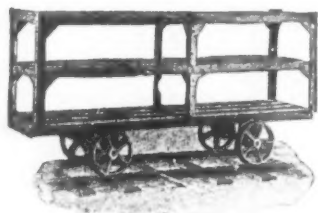
American Sand-Lime Brick Co.,

1306 Great Northern Building, CHICAGO.

We Build Cars



For Quarries, Mines, Cement Works, and General Use. Also Dumping Buckets, Stone Carriers or Skips, Wheels and Axles.



SWITCHES,
FROGS,
RAIL,
TURNABLES.



The Atlas Car & Mfg. Co.
CLEVELAND, OHIO.

"THE OLD RELIABLE"

GIANT PORTLAND CEMENT

A million barrels used
in the New York Sub-
ways by the Rapid
Transit Commission

THEY ARE STILL USING IT

AMERICAN CEMENT CO.

Manufacturers

LESLEY & TRINKLE CO.

General Sales Agents

603-610 Penna. Bldg., Philadelphia

UNITED BUILDING MATERIAL CO.

320 Broadway, New York.

101 Milk St., Boston.

THE STANDARD AMERICAN BRAND

Atlas Portland Cement

ALWAYS UNIFORM

ATLAS Portland Cement is manufactured from the finest raw materials, under expert supervision in every department of the works and is specified by leading engineers in the United States.

Output for 1907 over 13,500,000 bbls.

The Atlas Portland Cement Company
30 Broad Street, N. Y.